



**CONESTOGA-ROVERS
& ASSOCIATES**

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Final Report

2014 Annual Report

JIS Landfill Site
South Brunswick, New Jersey

Prepared for: JIS Landfill Site Performing Parties Group

Conestoga-Rovers & Associates

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Section 1.0 Introduction

On behalf of the JIS Landfill Site Performing Parties Group (JIS Group), Conestoga-Rovers & Associates (CRA) is submitting this annual progress report for the period October 2013 through September 2014 for the JIS Landfill Site (Site). The last report was submitted in January 2014. This annual report includes all sampling and monitoring activities completed since the last report, including those associated with the vapor intrusion assessments as well as all other components that were previously reported independently.

The Remedial Design/Remedial Action activities at the JIS Site were completed pursuant to Administrative Consent Orders (ACO) entered into in 1997 and in 2004 by the JIS Group and the NJDEP. All of the work associated with these ACOs is now complete.

A new Administrative Order (AO) covering future work to be performed at the JIS Site was issued by the USEPA to the JIS Group on September 3, 2010. This AO includes implementation/monitoring of the biosparge system and other remedial components for the Site as described in the Record of Decision (ROD), ROD Amendment, and the approved Remedial Action Work Plan. This annual progress report is being prepared pursuant to Section 13.0 of the Remedial Action Work Plan.

Section 2.0 Routine Activities Performed in the Reporting Period

2.1 Biosparge Groundwater Monitoring Program

The biosparge groundwater monitoring program consists of the collection and analysis of groundwater samples from 45 monitoring wells (MW-42 through MW-55 and MP-6) that were installed along the alignment of the biosparge system. The wells are grouped into 15 well nests with each well nest including a shallow, intermediate, and deep screened interval. The wells in the core of the JIS plume (located between wells MW-53 and MP-6) are sampled quarterly, whereas the remainder of the wells in the biosparge monitoring network are sampled annually. The samples from the wells that are on the annual cycle are collected in April of each year to coincide with the annual sampling event for the plume monitoring program. The biosparge sampling events were conducted on the following dates during this reporting period:

- October 14 – 16, 2013
- February 4 - 7, 2014
- April 8 – 10, 2014
- July 24 – 25, 2014
- October 15 -17, 2014

All of the wells in the biosparge monitoring program are sampled for VOCs (including 1,4-dichlorobenzene and 1,2,4-trichlorobenzene), arsenic, and manganese.

A groundwater sample is also collected from well MW-5 as part of the biosparge monitoring program. This well is located immediately downgradient of the landfill and upgradient of the biosparge system, and it provides an indication of the groundwater quality emanating from the landfill.

The biosparge monitoring program focuses on tracking the oxygen and VOC concentrations in the groundwater. The most prominent VOCs are:

- Benzene
- Chlorobenzene
- 1,4-dichlorobenzene
- Xylene
- 1,2,4-trichlorobenzene

Manganese is also a primary compound of concern although it is a naturally occurring compound and is not a compound that poses a health-related risk. Plots of the chemical concentration trends for these compounds are presented in Figures 1 through 7.

The analytical results from the biosparge monitoring program for this reporting period are presented in Table 1. The 2014 data are consistent with results from previous years and are summarized as follows:

- Groundwater at the JIS Landfill flows easterly. The contaminant plume is limited to a relatively narrow band emanating in the area of MW- 5 and moving downgradient between on-Site wells MW-53 and MP-6 (as shown in Figure 9). The biosparge injection system is located immediately downgradient of MW-53 and MP-6 and it provides treatment of the groundwater prior to reaching the downgradient property boundary. With few exceptions, this system has been successful in treating and mitigating further contaminant migration beyond the eastern property boundary.
- The total VOC concentration from the well located closest to the landfill in the primary core area (MW-5) continued to have concentrations ranging between 14,000 and 34,000 parts per billion (ppb) in 2014. Monitoring well MP-6, which is located 300 feet downgradient of MW-5, best reflects conditions along the primary plume axis downgradient of MW-5 and upgradient of the treatment zone. Total VOC concentrations at MP-6 exhibit significant

reductions when compared spatially to MW-5 and ranged from 200 to 4,300 ppb in 2014. Monitoring well MW-50 is the next downgradient well along the plume axis from MP-6 and is located within a line of off-property monitoring wells transecting the general plume area approximately 100 feet downgradient from the biosparge injection system. Total VOC levels are significantly reduced along this line and, with the exception of benzene in the shallow zone at well MW-49 and in the intermediate zone at well MW-50; all of the prominent VOCs were below the respective groundwater criterion in this downgradient area during the most recent monitoring event.

- The dissolved oxygen concentrations in the biosparge monitoring wells are presented in Figure 8 and on Table 2. The series of 120 injection wells that are used to deliver the compressed air into the aquifer from the compressor / control building is also shown on Figure 8. The oxygen concentrations measured in the most recent 2014 sampling event from the 45 groundwater monitoring wells that make up the biosparge monitoring well network fall into the following categories:

<0.2 ppm	(oxygen deficient)	5 wells
> 0.2 ppm but < 2 ppm	(may be limiting the biodegradation)	3 well
> 2 ppm but < 5 ppm	(adequate to support biodegradation)	3 wells
> 5 ppm	(ideal for biodegradation)	32 wells

– 2 wells have obstructions and could not be sampled

Of the five wells where the oxygen level is low, only one (MW-49S) is in the area downgradient of the biosparge system. Given the location of this well relative to the noted plume axis, we believe that more oxygen is being consumed to support the biodegradation process in the area upgradient of this well where higher VOC levels, particularly benzene, are present. However, the limited presence of oxygen at MW-49S in conjunction with the saturated oxygen conditions in the vertical zones immediately adjacent to these intervals is expected to facilitate the continued downgradient treatment of groundwater beyond this line of monitoring.

Recommendations for 2015 operations include continued optimization of oxygen distribution to promote increased oxygen levels at MW-49S. CRA has made several adjustments to focus oxygen injection in the core plume area and will continue to monitor and adjust the air injection distribution to further improve oxygen distribution in this area. In 2015, it is planned to acid wash 7 injection wells to rehabilitate their injection capacity. The procedures to be used will be identical to those used in 2012 when the first rehabilitation was performed.

It is noted that the JIS Group will be installing a few additional upgradient sentry wells to provide information that should be helpful in managing the operation of the biosparge system.

This plan is further described in Section 3.1 and will involve additional groundwater sampling in the biosparge system area.

2.2 Annual Groundwater Monitoring Program

The second monitoring program at the Site is the annual groundwater monitoring program. In 2014, the annual monitoring program consisted of the collection and analysis of groundwater samples from 26 wells in the JIS plume downgradient of the Site. The majority of these wells are within the JIS plume with the remainder being located just outside the plume which helps to delineate the extent of the plume. The tracking of the location of the plume and the concentrations of the chemicals within the plume are the primary purposes of the annual groundwater monitoring program. The annual sampling event is typically conducted in April every year since this is the time of year that it is easiest to access the wells and there is minimal interference with crops. In 2014, the annual sampling event was performed between April 8 and April 10.

The groundwater samples collected for the annual plume program are analyzed for VOCs (including 1,4-dichlorobenzene and 1,2,4-trichlorobenzene), arsenic, and manganese. The analytical results from the 2014 annual sampling program are included in Table 1. The 2014 data are consistent with results from previous years and are summarized as follows:

- As the JIS plume migrates downgradient along its easterly flow path, it also migrates vertically toward the bottom of the aquifer which is on the order of 100 feet below the ground surface. The historical groundwater data have shown that by the time the plume has migrated 2,000 feet downgradient of the Site, what remains of the core of the plume has reached the deep portion of the aquifer, where it continues to attenuate.
- The groundwater quality within the JIS plume area continues to improve.
- The improvement is occurring along the entire length of the plume.
- The mitigation of off-site migration and treatment of the JIS plume that has occurred due to the operation of the biosparge system has bisected the plume, with one part remaining beneath the landfill and the other attenuating downgradient plume segment now being separated from the on-Site plume by a distance of approximately 1,800 feet. This separation is the treated water zone that has been created by the biosparge system and natural attenuation. The plume continues to move with the groundwater flow regime which is estimated to migrate at a rate of about 1 foot per day. The oxygen enriched groundwater that was created by the biosparge system also continues to move at a rate of about 1 foot per day, thus extending the length of the treatment zone as it continues to migrate. Figure 9 shows the overall extent of the plume as defined by the 2014 annual sampling event. Figures 10, 11, and 12 show the extent of the plume in the individual layers of the aquifer as defined by the shallow, intermediate, and deep portions of the plume.

- The following summarizes the chemical conditions illustrated by the figures:
 - **Shallow** - The only off-site exceedances of the New Jersey Ground Water Quality Standards (NJGWQS) downgradient of the Site are wells located 100 feet from the Site boundary and three slight exceedances (for benzene, 1,2-dichloropropane, and 1,2,4-trichlorobenzene) at well MW-7 S which is located 300 feet east of the JIS Site boundary.
 - **Intermediate** – In the intermediate zone, the size of the plume has reduced since 2013 as there are no longer any exceedances of NJGWQS at either well MW-23 or MW-20 as existed in 2013. The only exceedances in the intermediate wells are for TCE (2 ppb) at well MW-22, a historic exceedance at MW-63 for PCE (in the most recent sample round collected from this well in 2010), and at well MW-21 where TCE has historically always been present. The current concentration at MW-21 is only 6 ppb. Benzene has recently also been present at this well, although the concentration is only 1.5 ppb. The highest total VOC concentration in the intermediate zone is now only 12 ppb (at well MW-20).
 - **Deep** – In the deep zone, the plume extends from well MW-34 to MW-60. The highest benzene concentration is 10 ppb at MW-60. The easternmost extent of the plume is located in the vicinity of well MW-60. Historically, Well MW-25 had defined the easternmost extent of the plume but the benzene concentrations at this well have decreased from 2,100 ppb in 2000, to less than 1,000 in 2004, to less than 100 in 2007, and have been below the NJGWQS of 1 ppb since 2012. The benzene concentration at well MW-60 has decreased from 47 ppb in 2007 to 10 ppb in 2014. Expectations are that the concentration of benzene in MW-60 will meet the NJGWQS within the next few years.
 - **MW-21** The groundwater quality patterns at well MW-21 (located in the vicinity of the intersection of Mott Road and South Amboy Turnpike), are not consistent with the patterns and trends noted in the JIS plume. This well is not located along the central axis of the JIS plume and the chemicals present at this well are different from those observed at well MW-25 (which historically defined the eastern limit of the JIS plume). Benzene has never been present in any of the well intervals at MW-21, with the exception of some very low levels (up to 3.2 ppb) that have been sporadically detected in the intermediate well since 2008. Consequently, its location and the chemistry indicate that well MW-21 is not located within the limits of the JIS plume. There is only one chemical that has been consistently found in this well nest above its NJGWQS. That chemical is TCE and it has been present at concentrations up to 24 ppb in the intermediate well and up to 45 ppb in the deep well. It has been detected in every sample taken from these two wells since the wells were installed in 1998. It has never been detected in the shallow well. The persistent presence of TCE in the intermediate and deep wells at this location, along with the absence of benzene, is inconsistent with the JIS plume. Furthermore, comparing the rapid decline of benzene in the JIS plume

with the limited rate of decline of the TCE concentration at MW-21 suggests that the TCE is not from the same source as the benzene. As discussed in the "Remedial Investigation Addendum – Secondary Plume Area" Report (CRA - July 2009), CRA does not believe that the JIS Landfill is the source of TCE at MW-21.

Based on the analytical data collected in recent years, the JIS Group prepared a Work Plan proposing some modifications to the groundwater monitoring program in 2014 (August 5 and September 16). The USEPA approved the Work Plan on October 30. CRA is currently arranging a Contractor to perform the well modifications with the expectation that they will be completed in the first and second quarters of 2015. The modifications are summarized as follows:

- Closure of 53 wells
- Installation of 2 replacement well nests (to replace MW-22 and MW-53)
- Installation of 3 new well nests upgradient of the biosparge injection system to provide additional information on groundwater quality approaching the injection system
- Conversion of 2 large diameter wells (PW-1 and PW-2) into monitoring wells that have screens set at two separate depths in the existing well screened interval.

In addition to the changes to the monitoring well network, the 2012 / 2013 Annual Report recommended a few changes to the annual groundwater monitoring program. The changes in the monitoring program were made to provide better coverage of the area downgradient of the JIS Site, given the current conditions. The following wells representing 17 distinct monitoring locations / depths (shallow, intermediate, and deep, as applicable) are now designated as the annual groundwater monitoring wells:

MW-7 S	MW-10 I	MW-20 I&D
MW-22 I&D	MW-23 I&D	MW-25 I&D
MW-30 I&D	MW-32 I&D	MW-34 I&D
MW-60D		

Consistent with the commitment made in the 2012 / 2013 Annual Report, samples will also be collected from wells MW 21I & D and MW 61D for one more year to monitor water quality in these areas. The data from this entire set of wells in the annual monitoring program will be used to determine the extent of chemical presence to recertify the Classification Exception Area in 2015.

2.3 Soil Vapor Intrusion Assessment

In accordance with the USEPA approved "Vapor Intrusion Sampling Plan" (CRA - August 2011), an annual assessment of the potential for soil vapor intrusion is performed at and around the JIS Landfill. The annual assessment uses the shallow groundwater data from monitoring wells included in the following groundwater monitoring programs to complete the assessment:

- The annual groundwater monitoring program which covers the entire JIS Plume downgradient of the JIS Site
- The groundwater monitoring that is performed to assess the effectiveness of the biosparge injection system
- A supplemental investigation of vapor intrusion potential that was conducted in the vicinity of the southeast corner of the JIS Site.

The data from these shallow wells are compared to the New Jersey Groundwater Screening Levels (NJGWSLs) to determine whether there are any exceedances, and if so, what buildings are in the vicinity of the exceedances that would warrant further consideration for assessment or investigation. The assessment takes into consideration land use changes that occur from time to time that may have a bearing on where specific investigations become necessary.

Based upon the results of the 2013 sampling programs, the 2014 assessment included the following work:

- Sampling of the indoor and outdoor air within and near the JIS building.
- Plans to sample the sub-slab conditions at the residence/auto body shop located at the intersection of Cranbury South River Road and Docks Corner Road. However, access was not granted and therefore it was not possible to collect the planned sub-slab samples from beneath this building. Consequently, groundwater samples from the two wells closest to the residence/auto body shop (MW-66S and MW-67S) were collected and analyzed.

The results of the sampling that was performed in 2014 are presented in the following sections.

2.3.1 Groundwater Sampling

The groundwater samples collected from all of the shallow groundwater monitoring wells included in the biosparge and annual monitoring programs in 2014 have been compared to the NJGWSLs and are presented in Table 3. Figure 14 presents the 2014 groundwater data on a map of the area. As can be seen from Figures 13 and 14, the 2014 groundwater results (Figure 14) are similar to the 2013 results (Figure 13). The only exceedances of NJGWSLs in

2014 occurred on and immediately adjacent to the JIS property. No NJGWSLs were exceeded from any shallow well in the annual monitoring program and only 4 of the 15 shallow wells in the biosparge monitoring program had an exceedance. These are the only areas of potential vapor intrusion concern (see Figure 14).

Based upon these data, the vapor intrusion sampling for the upcoming 2014/2015 heating season will include the following:

- Sampling of the indoor and outdoor air within and near the JIS building (It is planned to include this sampling of the JIS building in each annual event, unless the building is no longer occupied, demolished, or the groundwater quality meets the NJGWSLs).
- Sub-slab and outdoor air samples from beneath and near the residence/auto body shop located at the intersection of Cranbury South River Road and Docks Corner Road. A new request for access will be made to the owner of the property.

These are the only two buildings in the vicinity of a NJGWSL exceedance and therefore the only two buildings included in the planned sampling program for the coming heating season.

In conjunction with the commitment made in the 2012/2013 Annual Report, the JIS Group collected a set of groundwater samples from wells MW-66S and MW-67S near the southeast corner of the JIS Site in 2014. These are the two closest wells to the residence / auto body shop. The groundwater results from these two wells in 2014 (see Table 3) show that there are no exceedances of the NJGWSLs in these wells. Another set of samples will be collected from these wells in 2015 to provide confirmation of the shallow groundwater quality in the vicinity of the residence/auto body property.

2.3.2 Vadose Zone Well Sampling

In accordance with the Remedial Action Work Plan, the vadose zone wells that were installed to monitor the soil gas quality around the biosparge injection system continue to be sampled semi-annually. The sampling program involves the use of hand held equipment to monitor the vadose zone in the seven on-Site vadose zone monitoring wells, as shown on Figure 15.

The results of the vadose zone sampling of the biosparge monitoring wells performed in 2014 are presented in Table 4. The results are consistent with the previous years' data. All of the photoionization sample results are 0.0 ppm. Consistent with the Remedial Action Work Plan, no summa canister samples were collected in 2014 since the vapor readings in the wells were at or near background levels.

2.3.3 Indoor Air / Sub-Slab Vapor Assessment 2014

The long-term monitoring program for the JIS Site includes an indoor air quality assessment component. On March 12, 2014, CRA collected an indoor air sample from within the JIS building. A sample of the outdoor air adjacent to the JIS building was also collected and analyzed. The analytical results for the samples are presented in Table 5. A comparison to the applicable NJDEP air quality criteria is also provided. It is noted that none of the detected chemicals in the indoor air sample exceeds the New Jersey Rapid Action Levels and no compounds exceeded the NJDEP non-residential indoor air criteria. As was experienced with previous sampling events, some compounds were detected in the indoor air within the JIS building. Most of the detected compounds (1,2,4-trimethylbenzene, benzene, ethylbenzene, toluene, and xylene) are found in petroleum-based products. Given that the office is attached to the Jones' machine and repair shop, it is not unexpected that vapors from such petroleum-based chemicals would be present in the indoor air of the office.

It was also planned to collect a sub-slab vapor sample from the residence / auto body shop located to the southeast of the intersection of Cranbury South River Road and Docks Corner Road. However, access permission to perform this sampling was not provided by the owner of the property. Consequently, the planned sub-slab sampling was not performed. A request will be made for access to collect these samples during the 2014/2015 winter heating season.

2.4 Site Maintenance

The routine Site inspections conducted over the past year have not identified any items requiring special attention. All systems are operating / performing normally as follows:

- The air injection system operated as designed. The compressor received normal maintenance.
- The Site cap is in good condition. There were no signs of erosion and the vegetative cover is healthy. The vegetation was cut twice; once in June and again in August.
- The Site security is in good condition.
- There are two biosparge system monitoring wells that have obstructions preventing the insertion of sampling equipment (MW-53S and MW-53 D). Efforts to remove the obstructions were unsuccessful. It is planned to replace these wells in the coming year.

2.5 Reporting

The JIS Group submitted the first Annual Report to the USEPA on January 30, 2014 (previous reporting was semi-annual). That report covered the period October 2012 through

December 2013. It is planned to submit these annual reports in December each year in conjunction with the JIS Group's preparations for the annual vapor intrusion investigations.

Section 3.0 Additional Activities Performed in Reporting Period

3.1 Classification Exception Area

In 2011, the JIS Group submitted a report to the NJDEP providing information on the location of the JIS plume downgradient of the Site and a list of the private properties upon which the plume is located. (The list also included private properties upon which groundwater exceeds a NJGWQS, regardless of the location from which the chemicals may have been sourced.) This documentation was accepted by the NJDEP and on May 6, 2013, the NJDEP issued a letter approving the Classification Exception Area (CEA) as defined in the report. In August 2013, the JIS Group sent registered letters to the property owners, municipalities, and county health departments included in the CEA. The current CEA will remain in effect until 2015. The New Jersey regulations require biennial recertification of the CEA. The first recertification is required to be completed by May 6, 2015. It is noted that the groundwater concentrations in the plume continue to decrease, and therefore, the JIS Group anticipates that the area included in the CEA will also decrease over time. Consequently, the JIS Group also anticipates that the number of properties that will be included in the next iteration of the CEA will also decrease. Figure 16 shows the limits of the CEA based on the most recent 2014 groundwater data.

3.2 Freehold Soil Conservation District

In more recent discussions with the Freehold Soil Conservation District, they claimed that the permit initially issued in 2000 for the construction of the Site cap was still open. On September 10, 2013, the JIS Group submitted documentation necessary to close out this permit. On June 3, 2014, the Freehold Soil Conservation District issued a Report of Compliance for the original permit, thus concluding the work associated with the permit.

3.3 Well Modifications

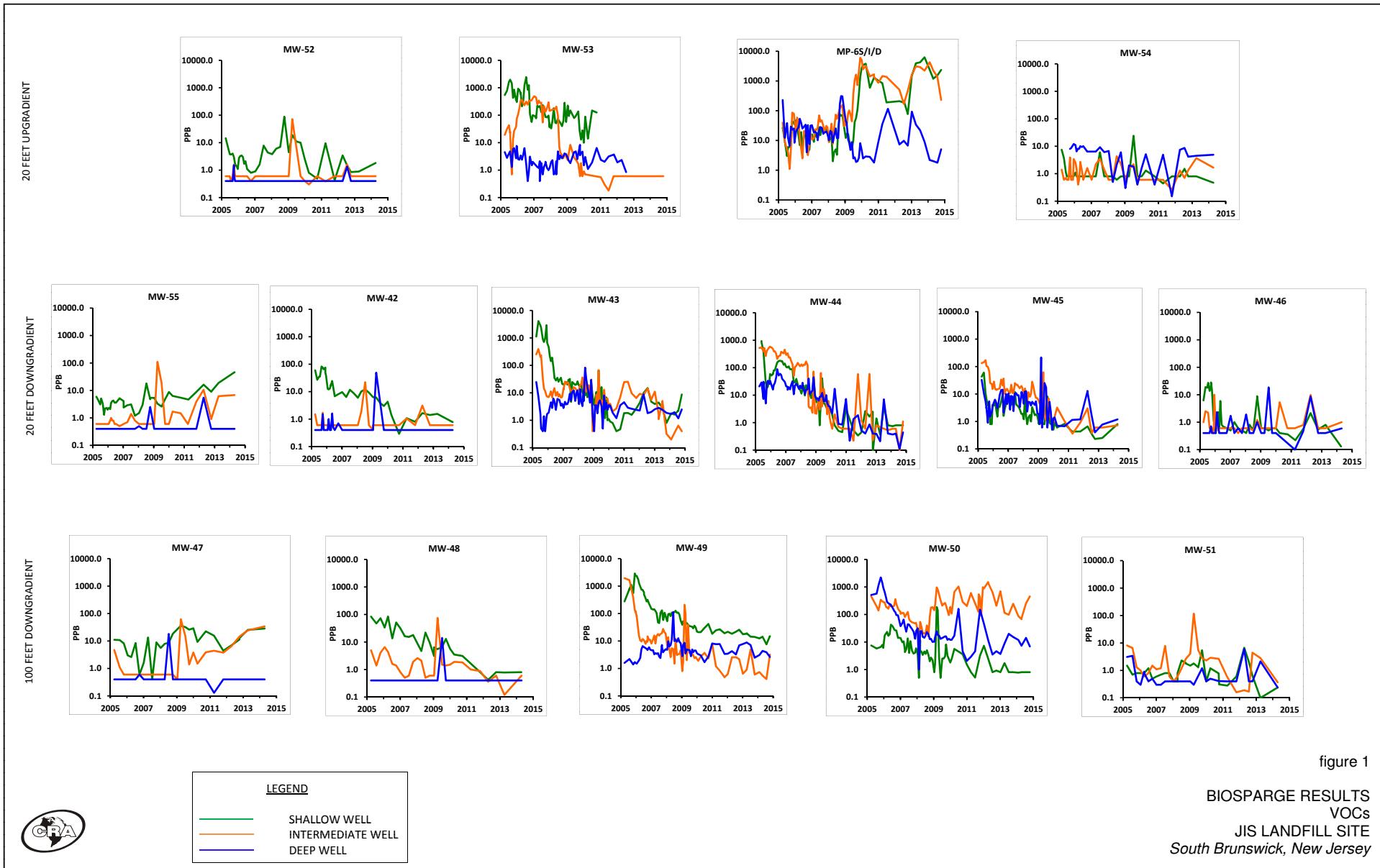
In 2014, the USEPA, NJDEP, and the JIS Group discussed, met, and agreed upon a series of well closures, well relocations, new well installations, and well modifications. It is planned to complete this work in the first and second quarter of 2015.

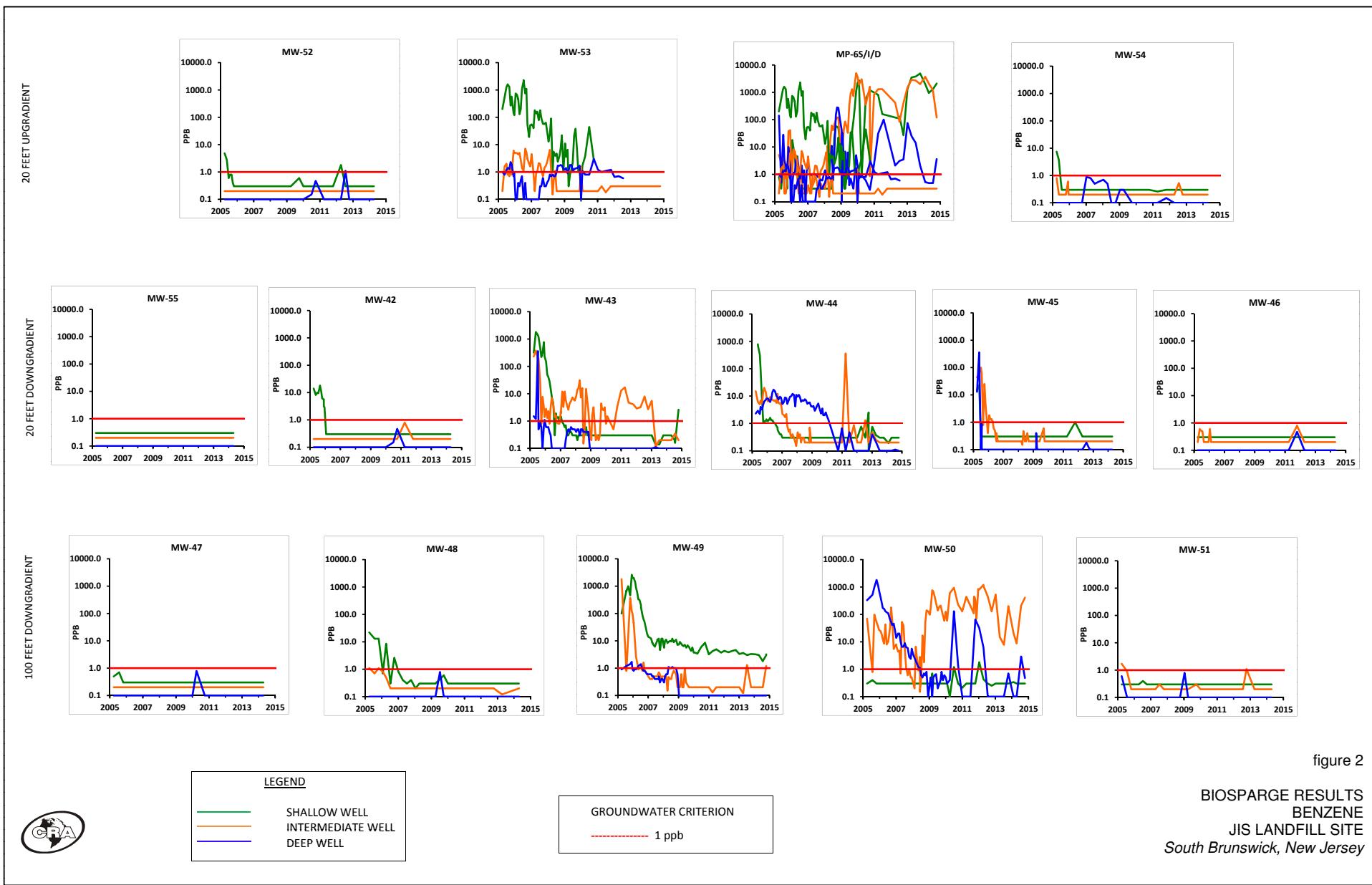
The locations of the wells included in the modification program are shown on Figure 17.

Section 4.0 Work Scheduled for the Next Reporting Period

In the next reporting period (2015), the work to be performed will be compliant with that specified in the Remedial Action Work Plan. The following work is scheduled for the next reporting period:

- Continue to operate and maintain the biosparge treatment system.
- Continue to perform the biosparge groundwater monitoring program and the annual plume groundwater monitoring program.
- Perform the soil vapor intrusion sampling during the winter months, including access requests.
- Complete the program of well modifications, replacements, and closures as described in the approved Work Plan in the first and second quarters of 2015.
- The annual report on the year's activities will be prepared and submitted in December 2015.
- Continue to work with the various property owners around the JIS Site on an as-needed basis.





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figure 2

BIOSPARGE RESULTS
BENZENE
JIS LANDFILL SITE
South Brunswick, New Jersey

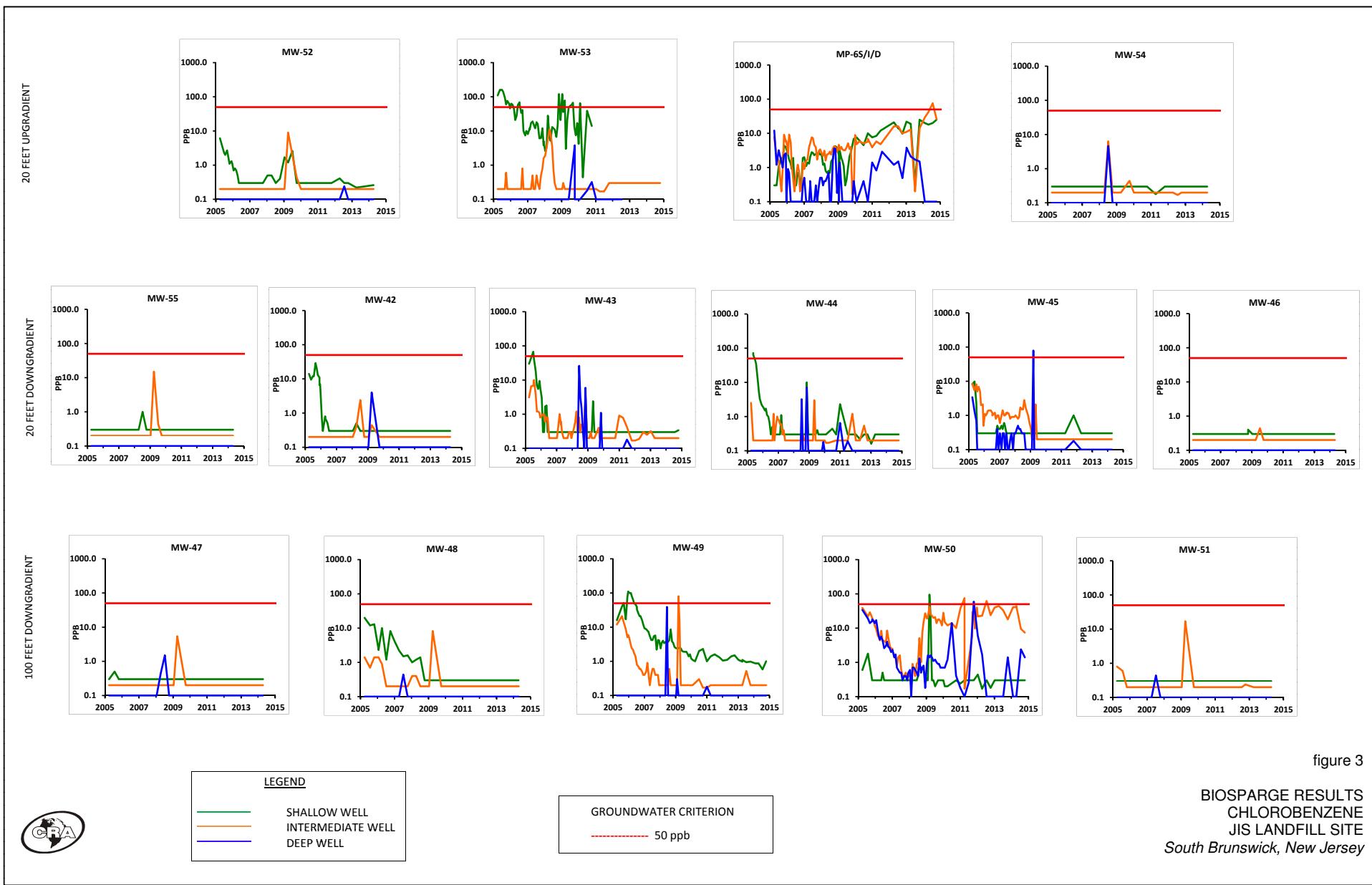


figure 3

BIOSPARGE RESULTS
CHLOROBENZENE
JIS LANDFILL SITE
South Brunswick, New Jersey

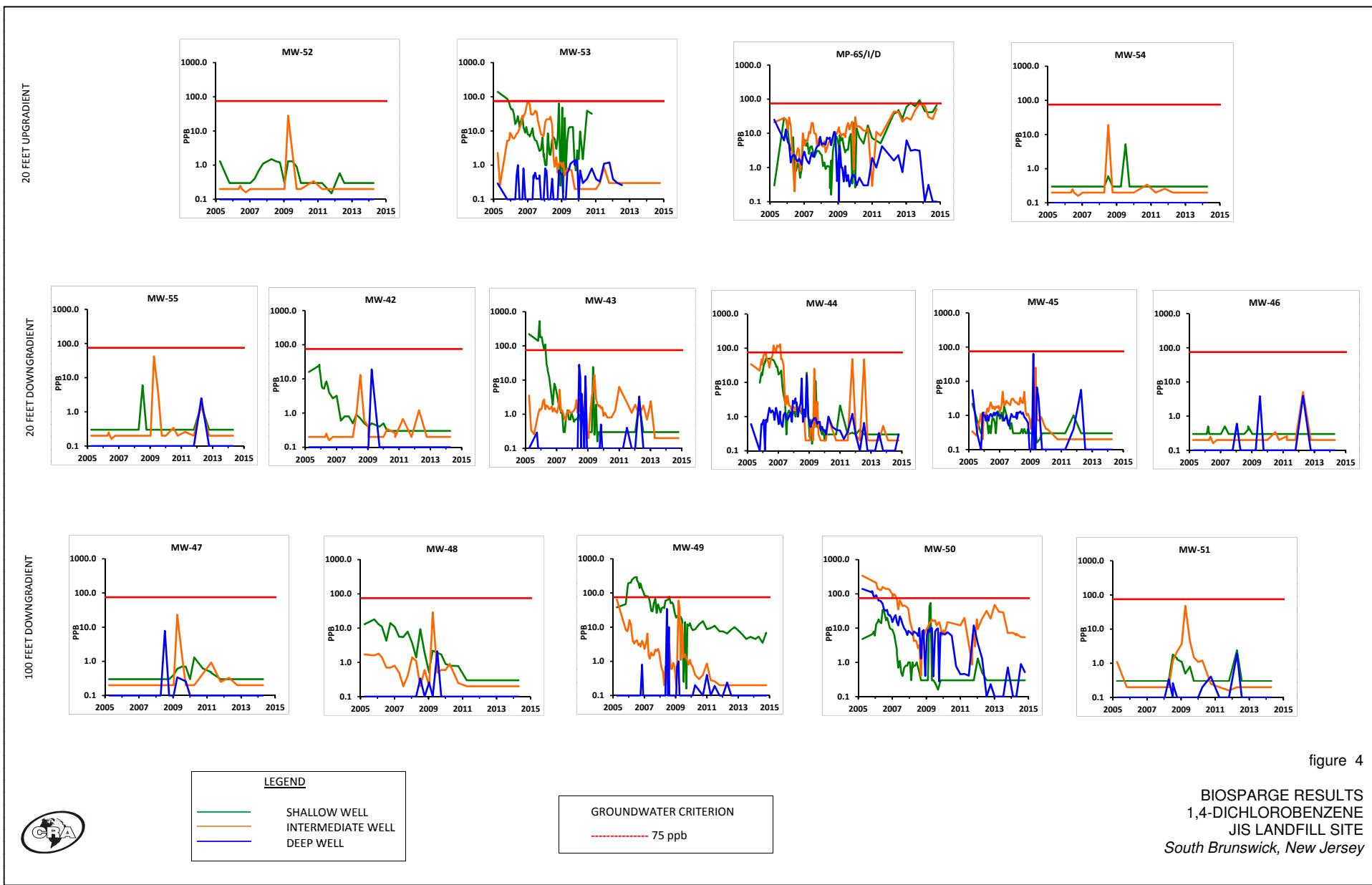
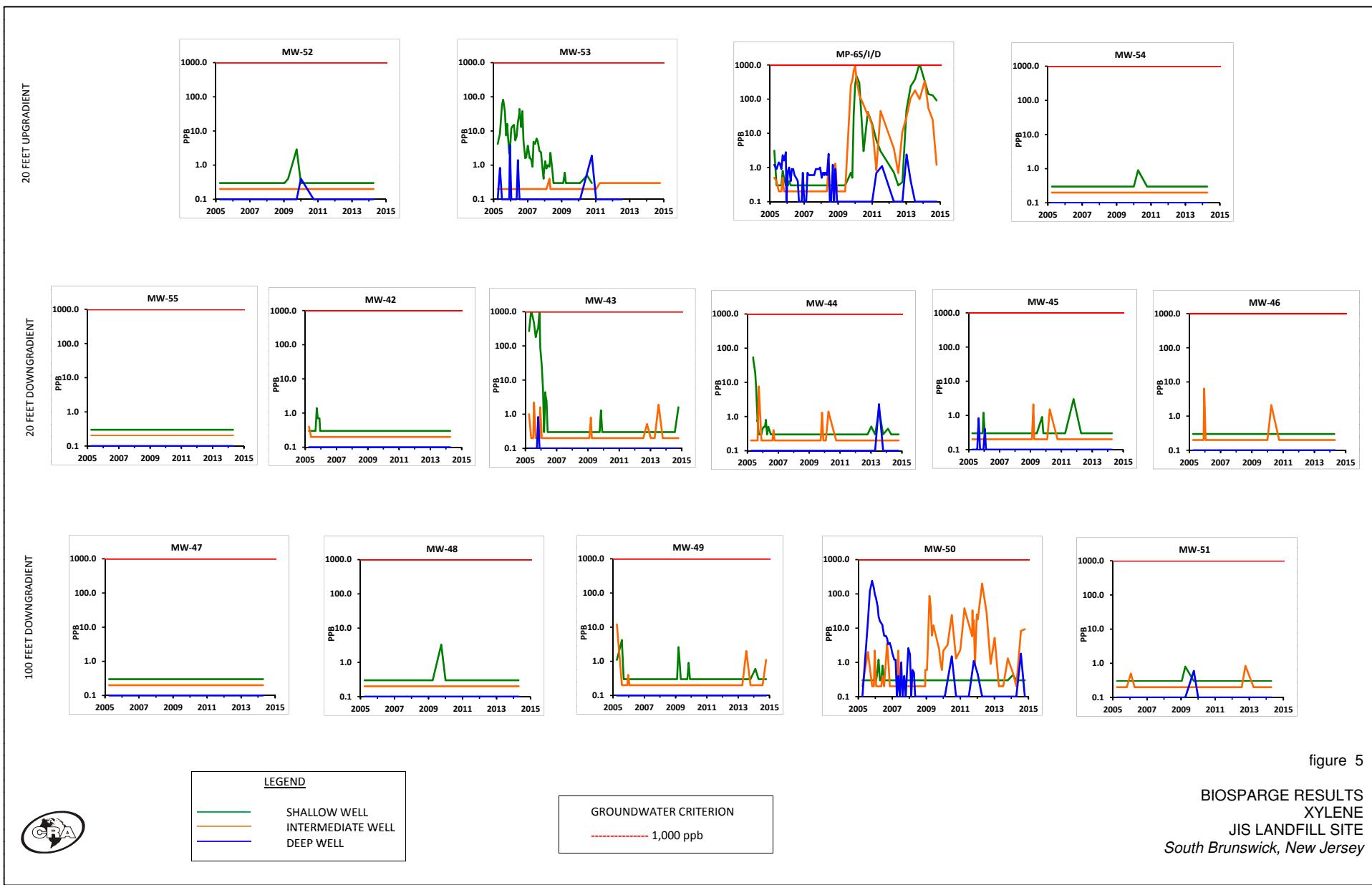


figure 4

BIOSPARGE RESULTS
1,4-DICHLOROBENZENE
JIS LANDFILL SITE
South Brunswick, New Jersey



14737-00(066)GIS-0T005 Jan 12/2015

figure 5

BIOSPARGE RESULTS
XYLENE
JIS LANDFILL SITE
South Brunswick, New Jersey

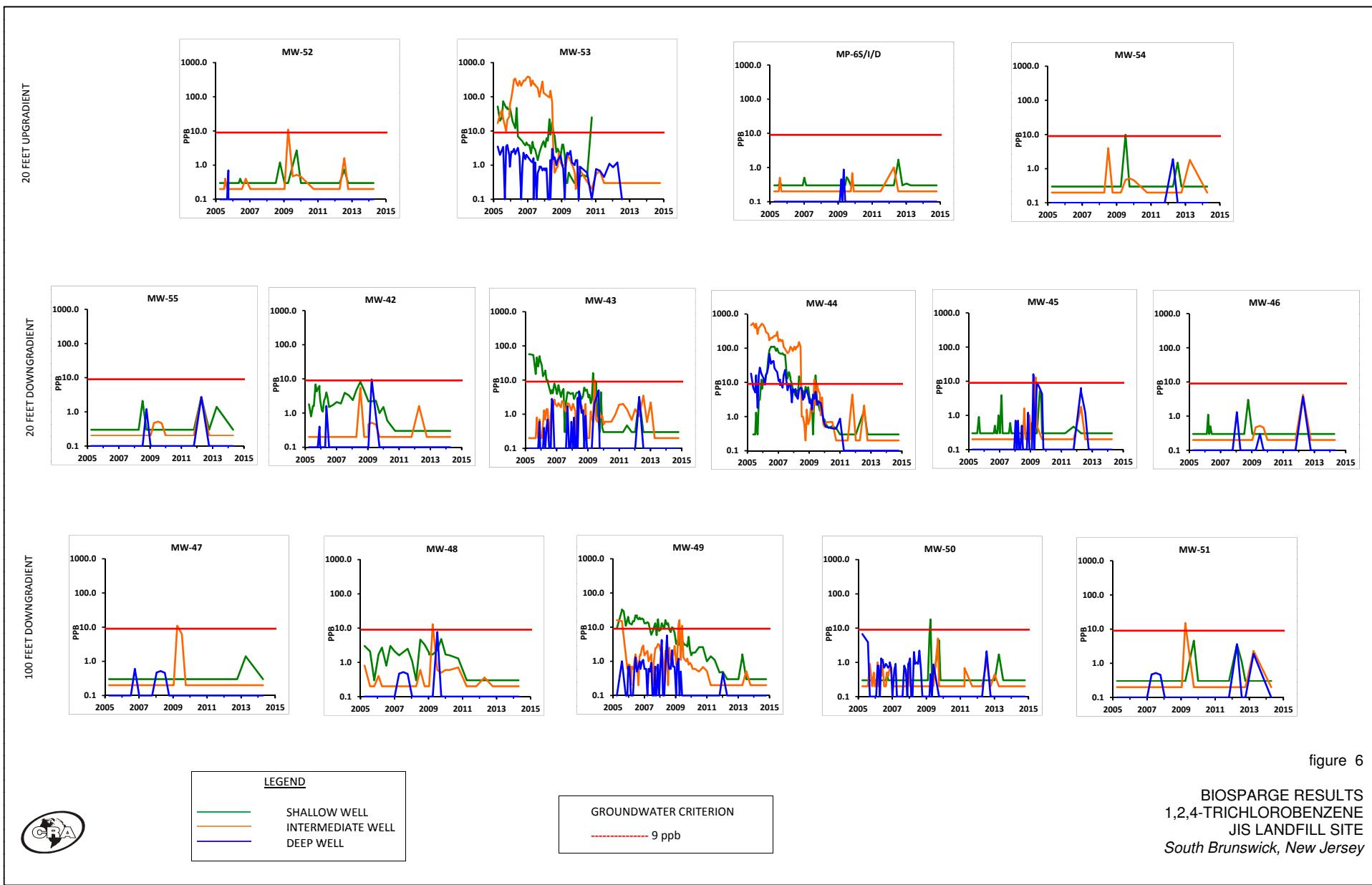


figure 6

BIOSPARGE RESULTS
1,2,4-TRICHLOROBENZENE
JIS LANDFILL SITE
South Brunswick, New Jersey

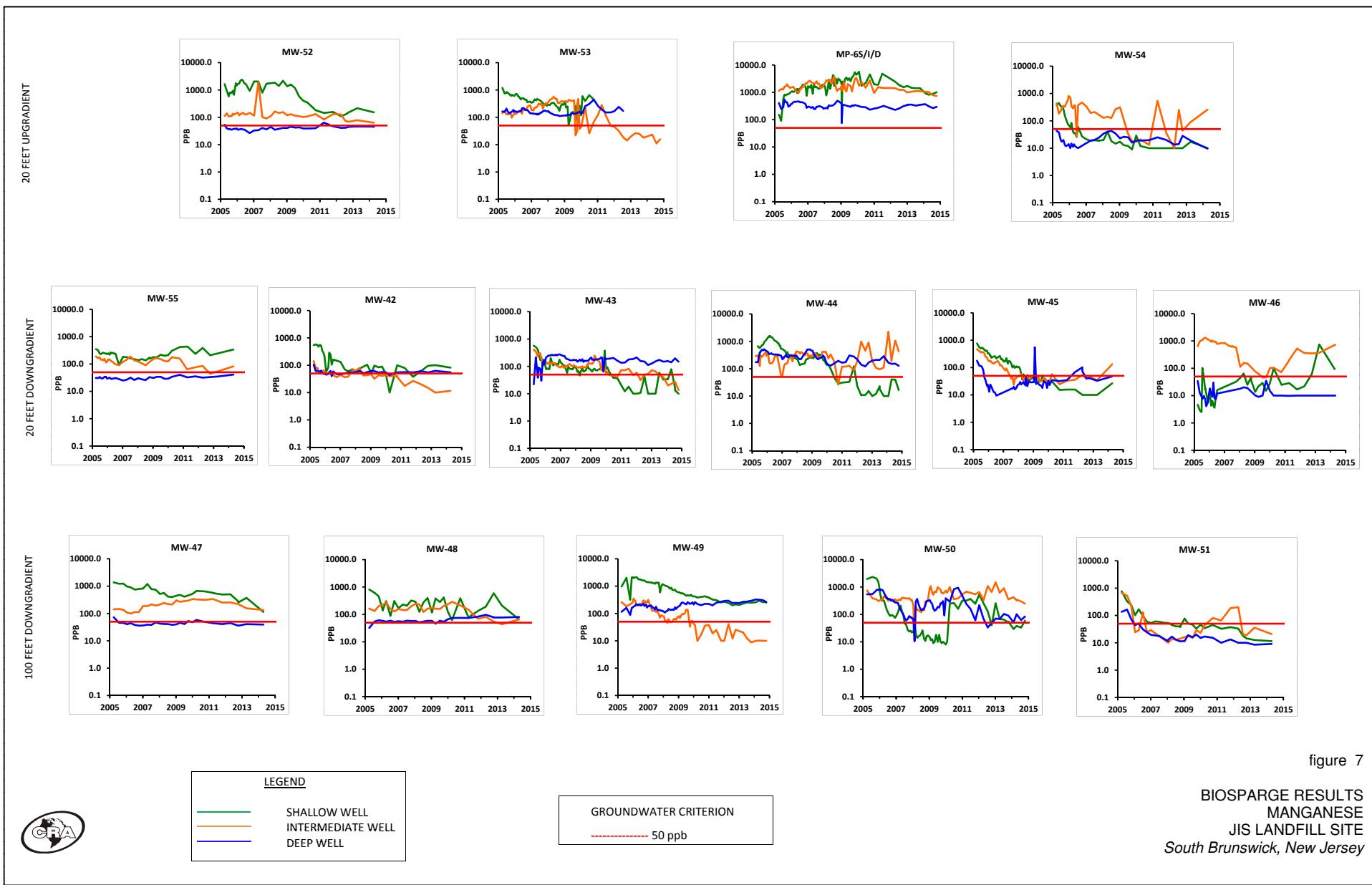


figure 7

BIOSPARGE RESULTS
MANGANESE
JIS LANDFILL SITE
South Brunswick, New Jersey

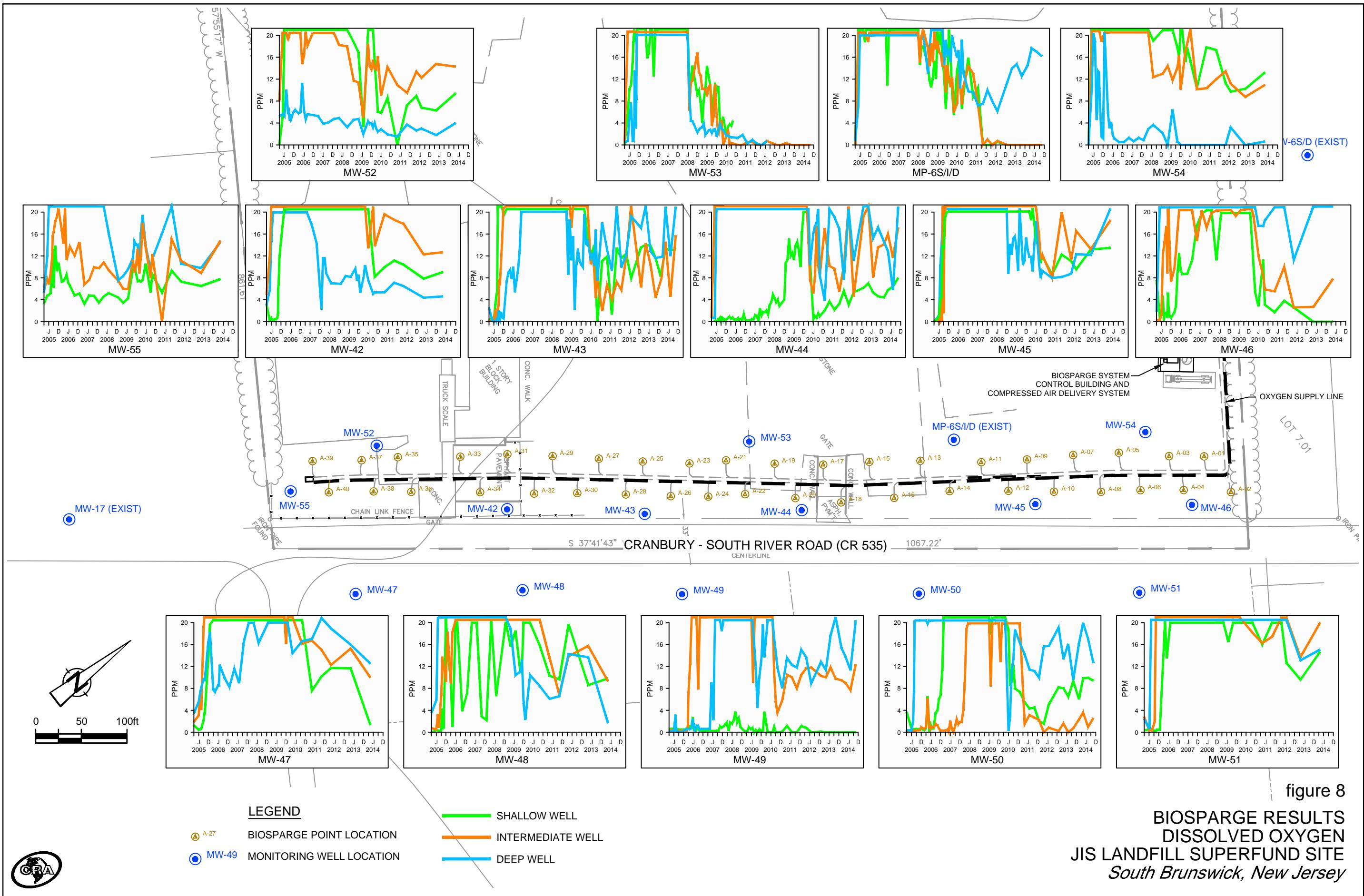
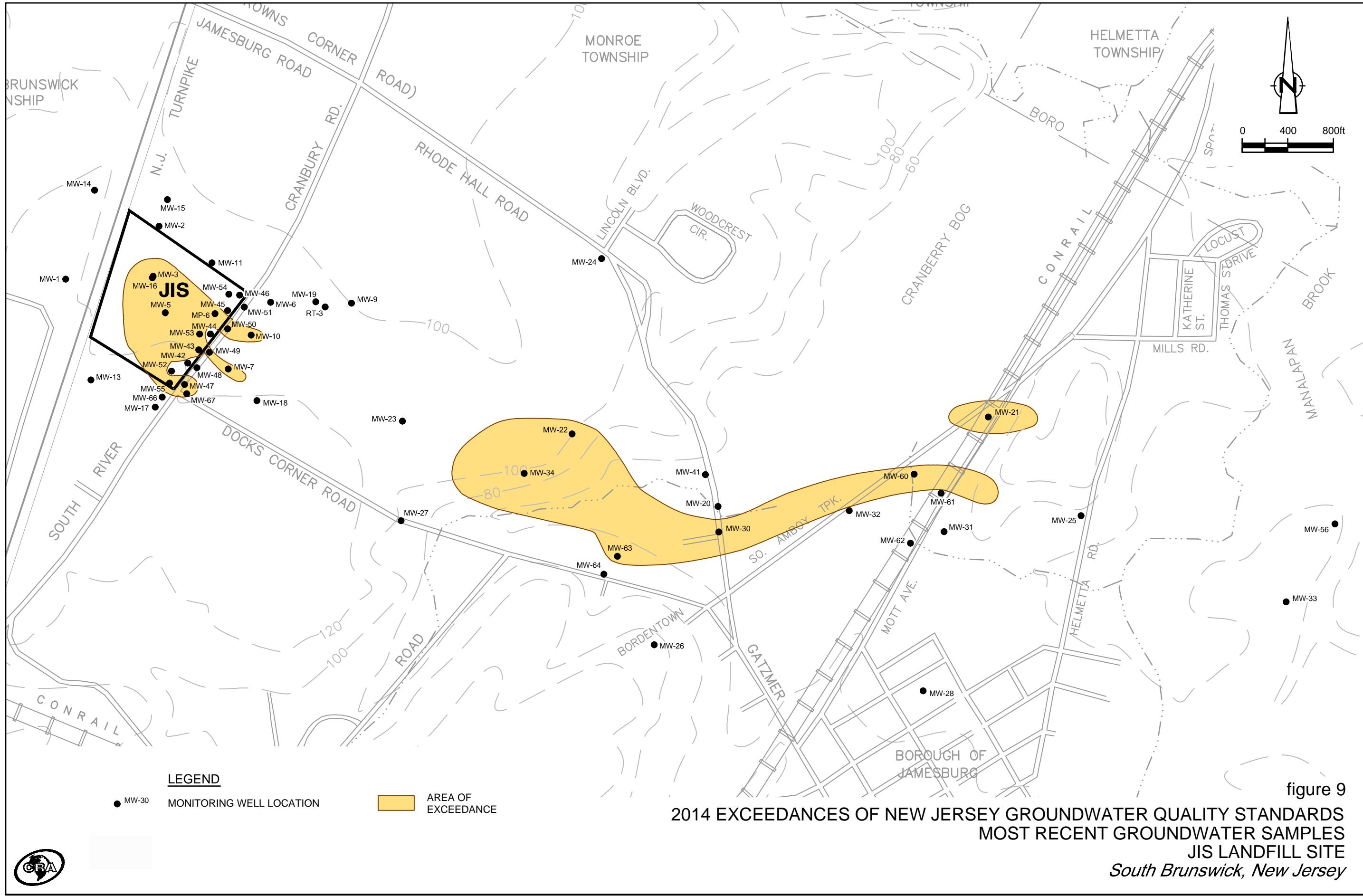


figure 8

**BIOSPARGE RESULTS
DISSOLVED OXYGEN
JIS LANDFILL SUPERFUND SITE
South Brunswick, New Jersey**



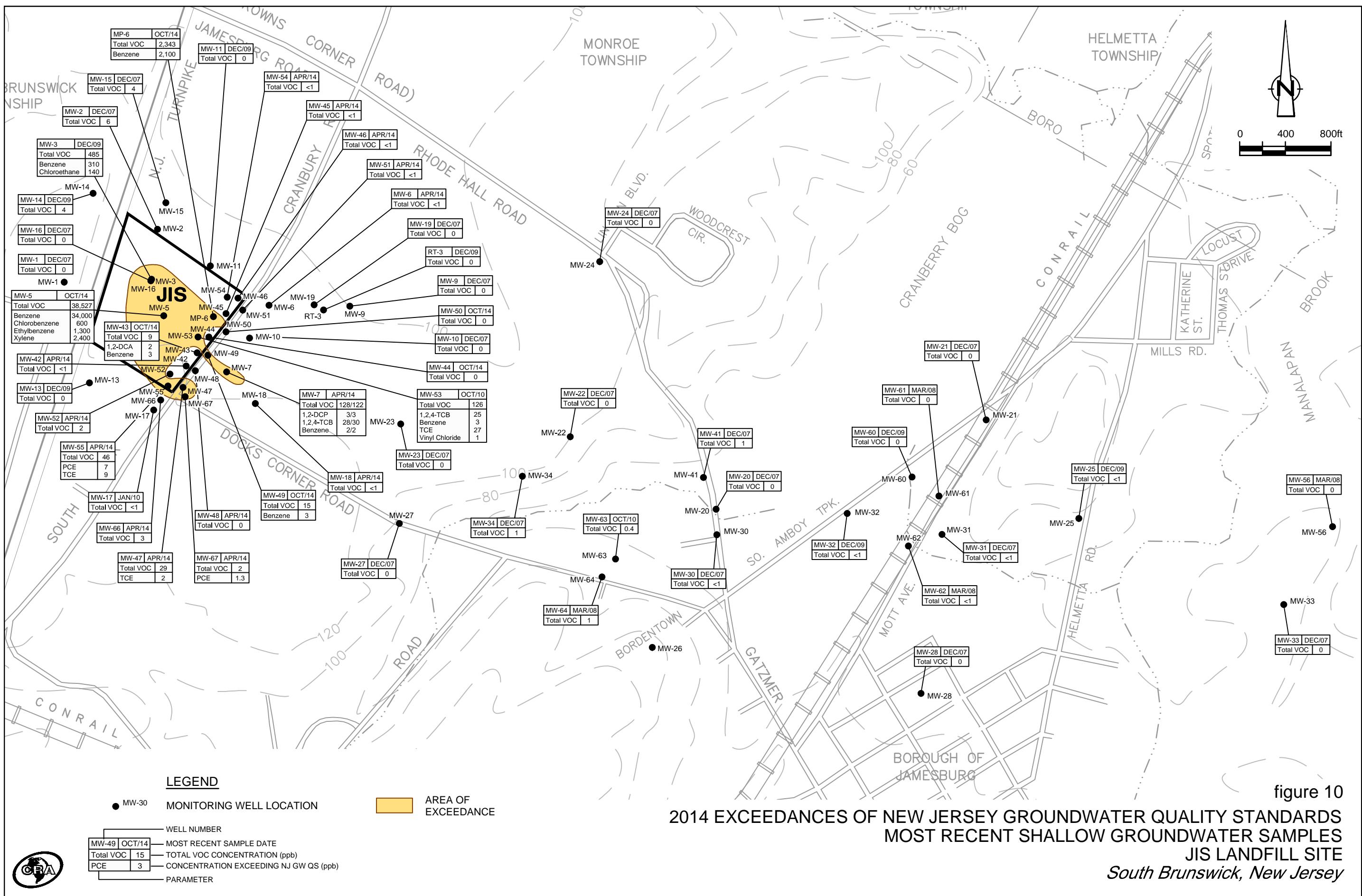
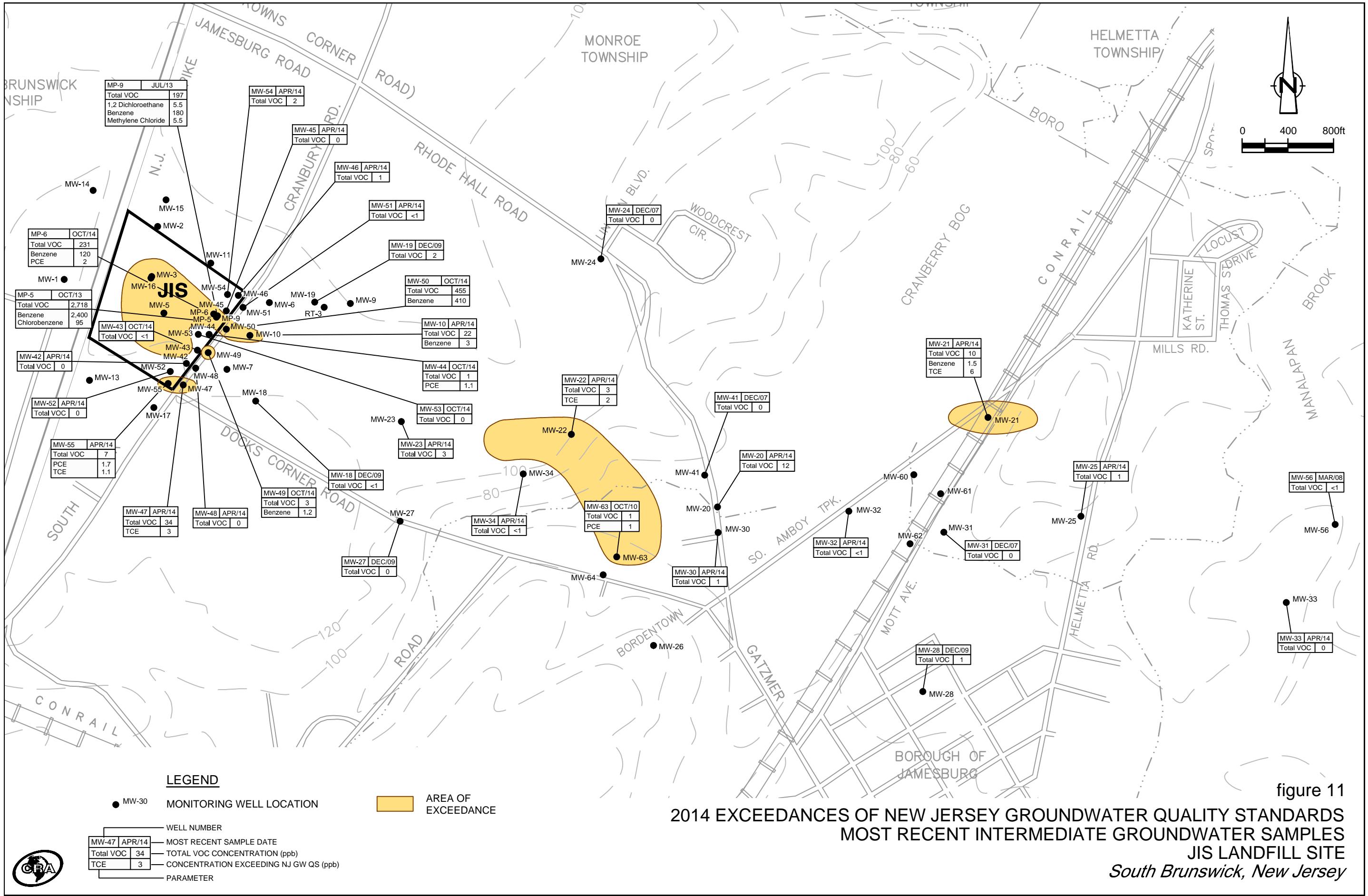


figure 10



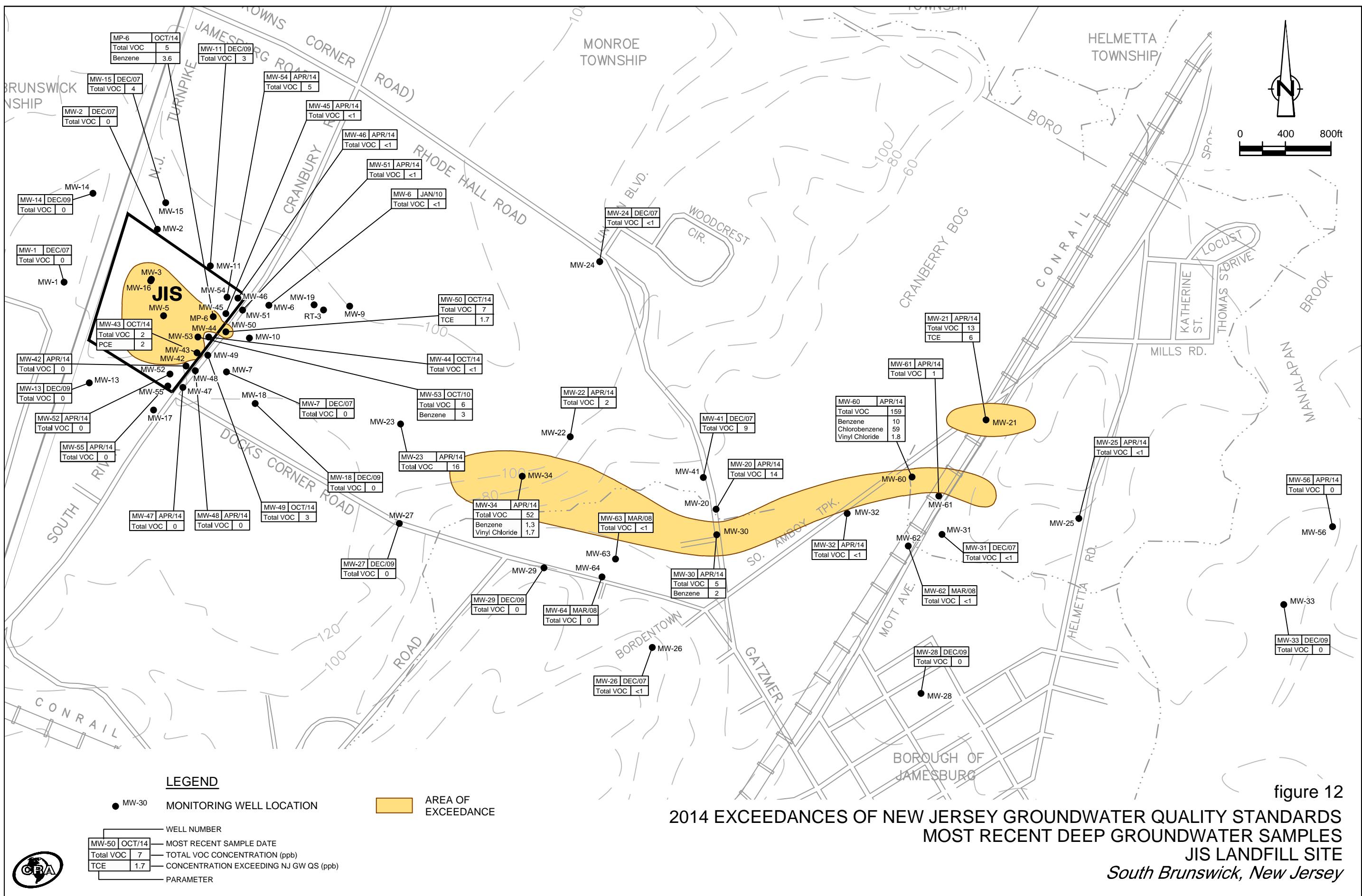
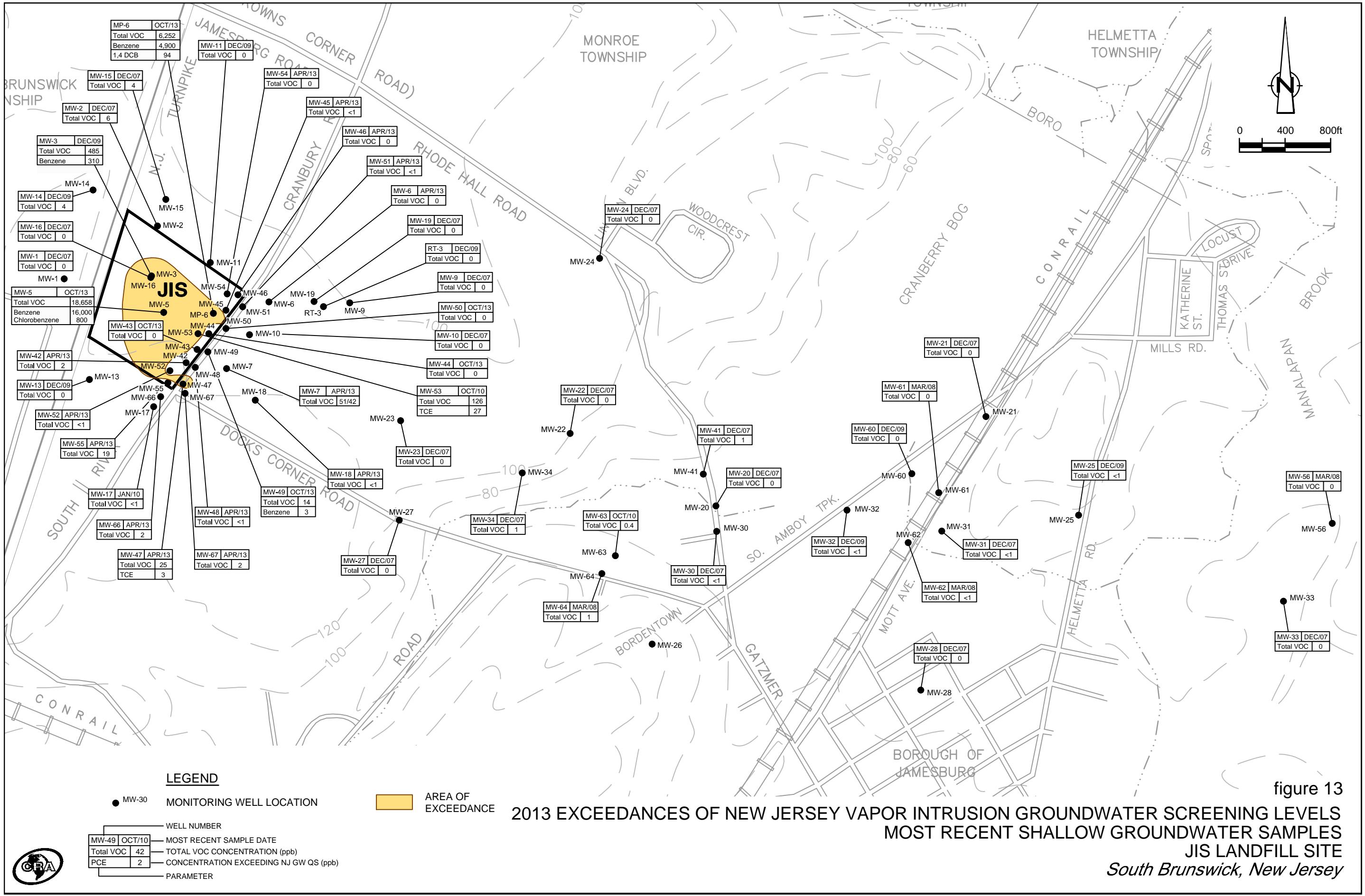


figure 12

2014 EXCEEDANCES OF NEW JERSEY GROUNDWATER QUALITY STANDARDS MOST RECENT DEEP GROUNDWATER SAMPLES

JIS LANDFILL SITE



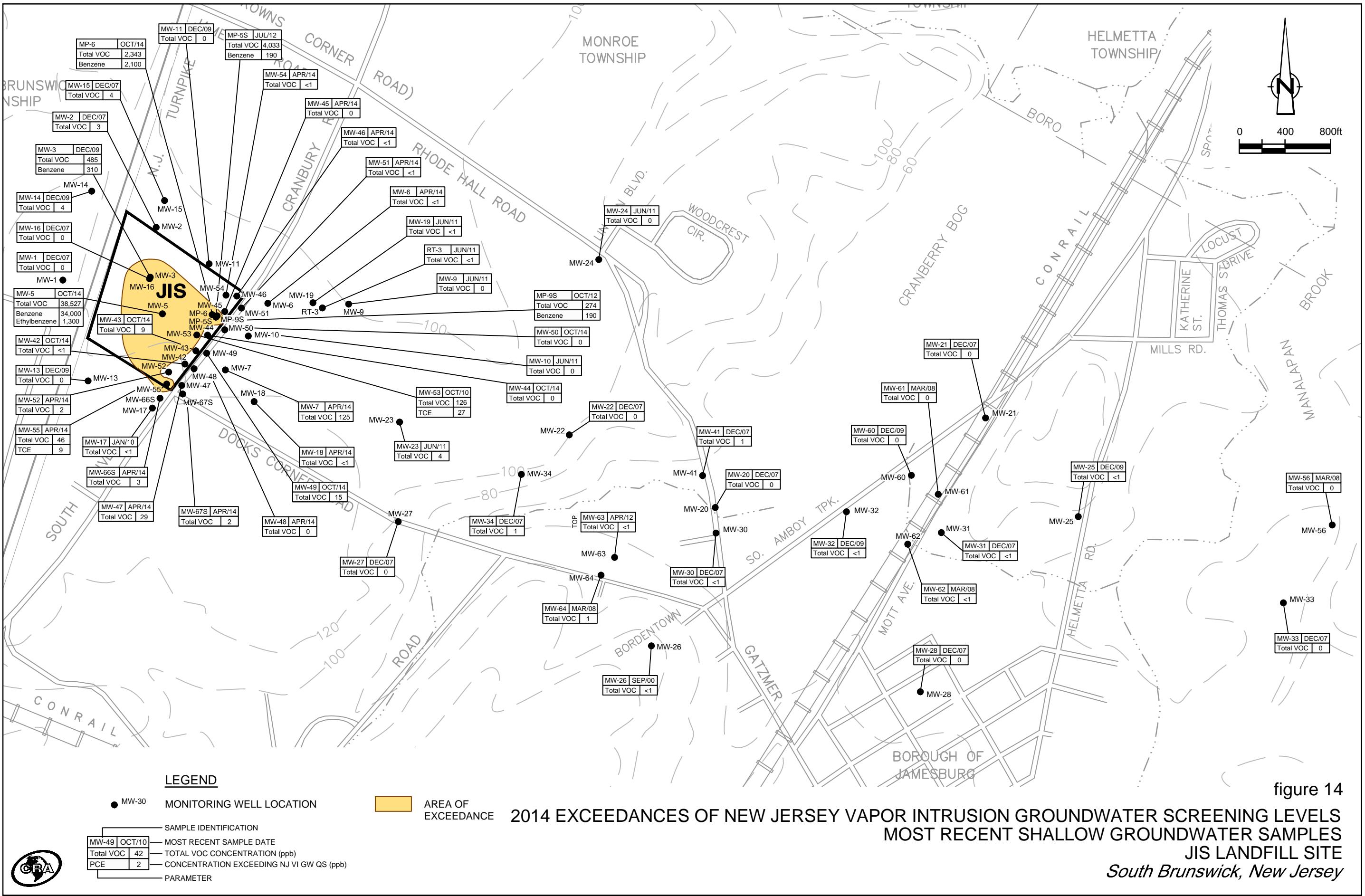
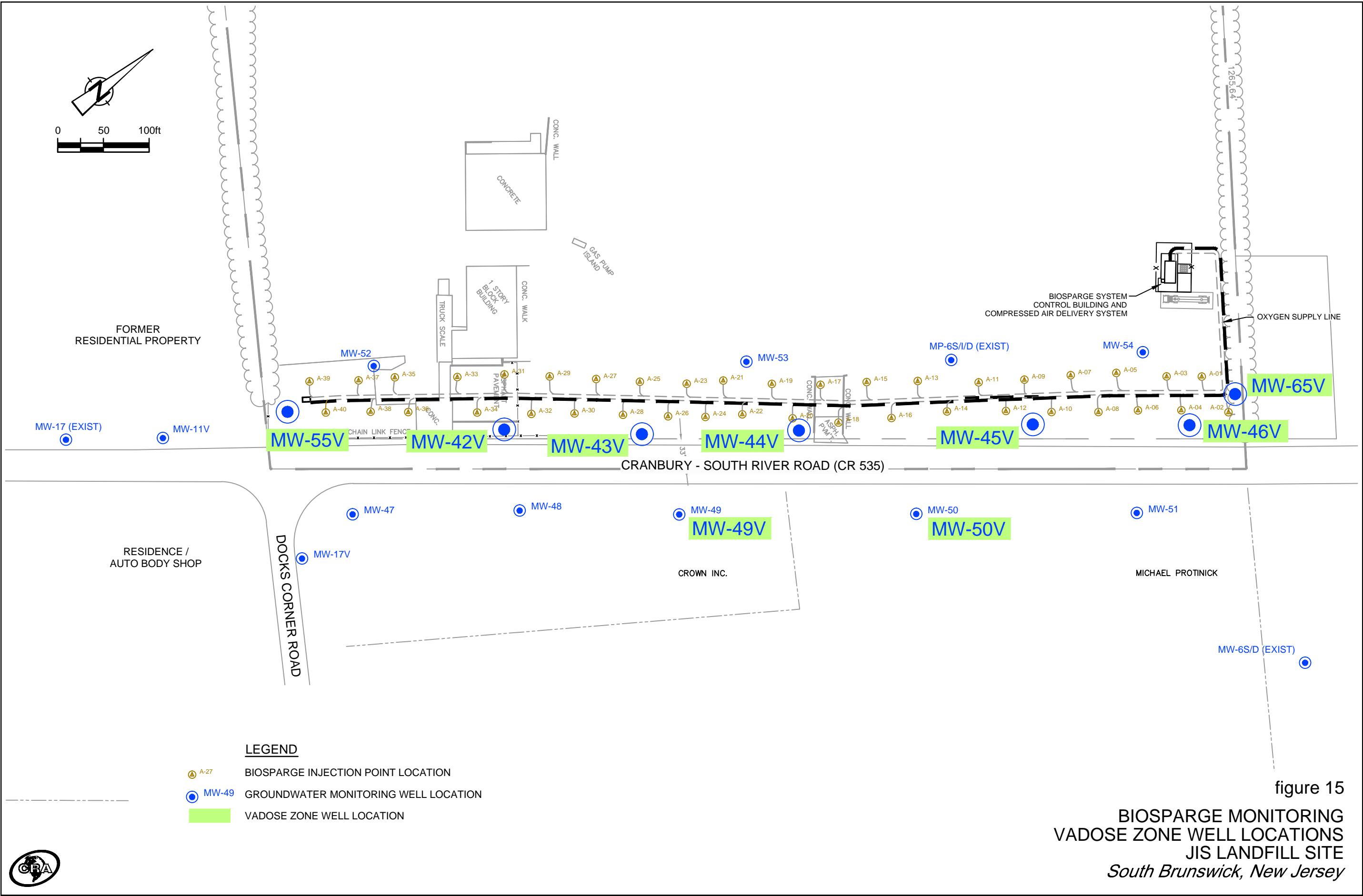


figure 14



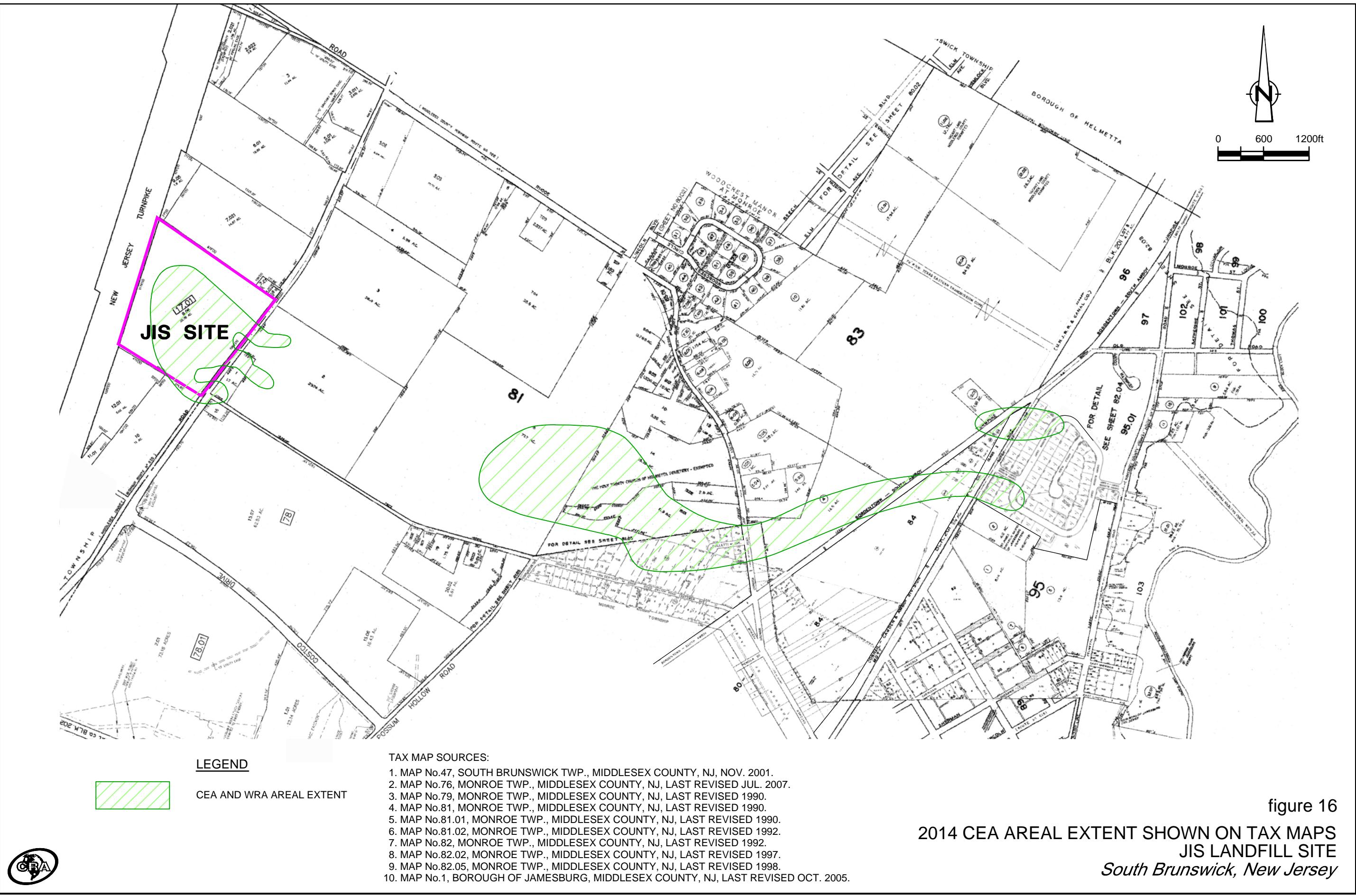


figure 16

**2014 CEA AREAL EXTENT SHOWN ON TAX MAPS
JIS LANDFILL SITE
*South Brunswick, New Jersey***



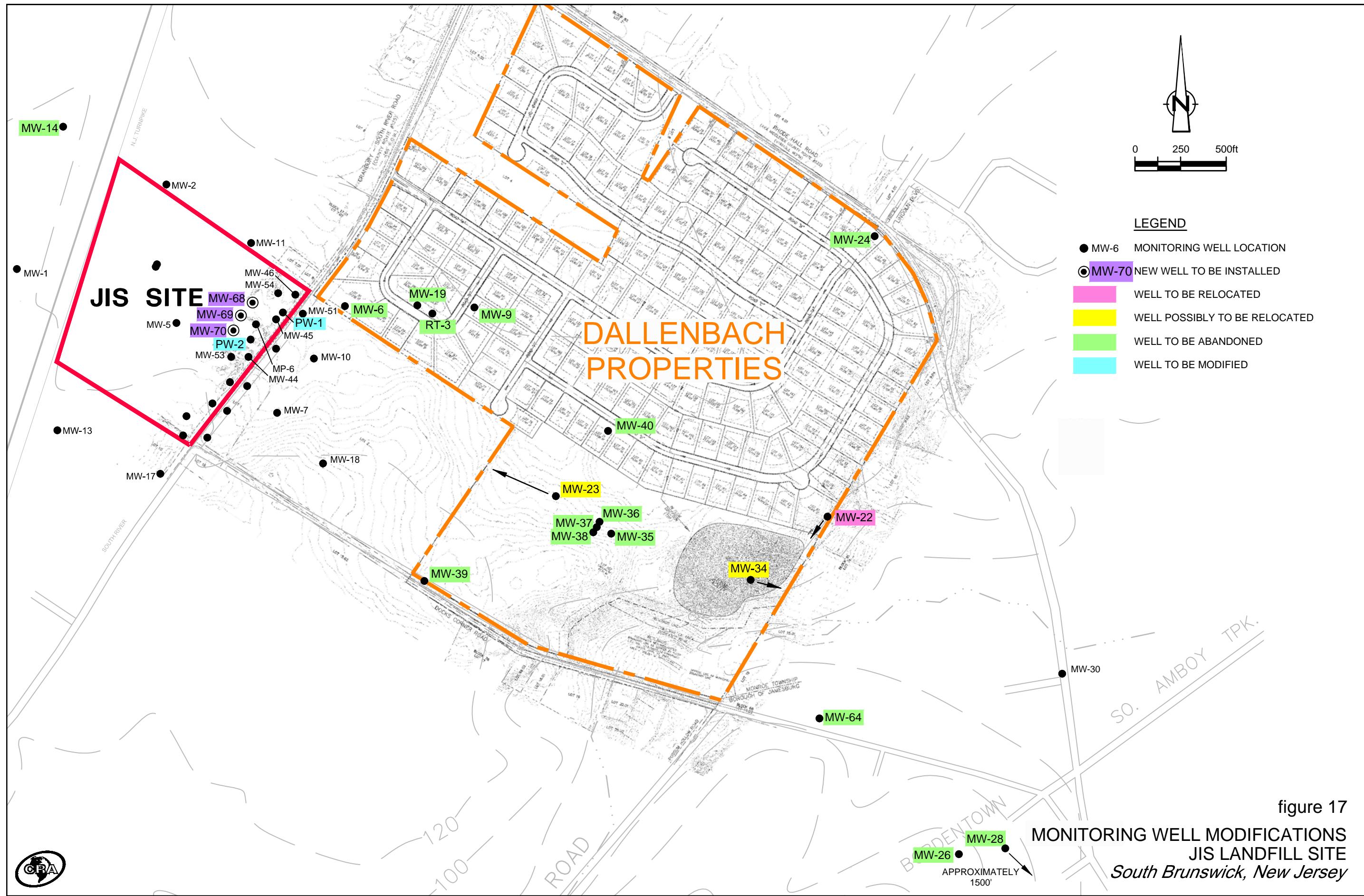


TABLE 1

GROUNDWATER ANALYTICAL RESULTS
NJGWS COMPARISON
JIS LANDFILL SITE

Sample Location:		NIDEP Groundwater Quality Criterion	MP-6SR 10/15/2013	MP-6SR 2/4/2014	MP-6SR 4/24/2014	MP-6SR 7/24/2014	MP-6SR 10/15/2014	MP-6IR 10/16/2013	MP-6IR 2/4/2014	MP-6IR 4/24/2014	MP-6IR 7/24/2014	MP-6IR 10/15/2014	MP-6D 10/15/2013	MP-6D 2/4/2014
Parameter	Units													
Volatiles														
1,1,1-Trichloroethane	ug/L	30	25 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Tetrachloroethane	ug/L	1	25 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	ug/L	3	25 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	ug/L	50	25 U	1.0 U	0.21 J	1.0 U	0.26 J	10 U	1.0 U	1.0 U	1.0 U	0.29 J	1.0 U	0.40 J
1,1-Dichloroethene	ug/L	1	25 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	ug/L	9	25 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	ug/L	600	7.0 J	2.3 J	1.7	1.8	2.1	10 U	2.8 J	2.2	2.9	2.0	1.0 U	1.0 U
1,2-Dichloroethane	ug/L	2	25 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	ug/L	1	25 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	ug/L	600	12 J	4.9 J	4.6	3.5	6.2	8.5 J	8.5 J	7.0	9.7	8.7	0.34 J	1.0 U
1,4-Dichlorobenzene	ug/L	75	94	45 J	41	42	66	74	64 J	30	26	52	3.1	1.0 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	--	130 U	5.0 U	5.0 U	5.0 U	5.0 U	50 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Acetone	ug/L	6000	130 U	5.0 U	5.0 U	5.0 U	5.1	50 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	ug/L	1	4900	2000 J	950	1300	2100	2000	3700	2100	1200	120	2.1	0.52 J
Bromodichloromethane	ug/L	1	25 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	ug/L	4	25 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane (Methyl bromide)	ug/L	10	25 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon tetrachloride	ug/L	1	25 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	ug/L	50	25	20 J	18	20	25	14	29 J	42	76	26	1.5	1.0 U
Chloroethane	ug/L	--	25 U	14 J	7.3	17	16	10 U	11 J	7.9	20	8.7	1.0 U	1.0 U
Chloroform (Trichloromethane)	ug/L	70	25 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	0.73 J	0.96 J
Chloromethane (Methyl chloride)	ug/L	--	25 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	ug/L	70	25 U	0.50 J	0.25 J	0.27 J	1.0 U	10 U	0.22 J	0.34 J	1.0 U	0.85 J	1.0 U	1.0 U
cis-1,3-Dichloropropene	ug/L	1	25 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Cyclohexane	ug/L	--	16 J	11 J	9.1	6.3	13	7.6 J	11 J	8.3	7.2	7.4	1.0 U	1.0 U
Dibromochloromethane	ug/L	1	25 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dichlorodifluoromethane (CFC-12)	ug/L	1000	25 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	ug/L	700	94	34 J	13	12	11	20	80 J	7.8	3.7	0.16 J	1.0 U	1.0 U
Hexane	ug/L	30	25 U	3.3 J	2.0	1.0 U	1.0 U	10 U	2.2 J	2.0	2.7	1.0 U	1.0 U	1.0 U
Methylene chloride	ug/L	3	25 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	0.31 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	ug/L	1	25 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	2.3	0.42 J	0.32 J
Toluene	ug/L	600	4.6 J	4.7 J	2.1	2.5	4.5	2.4 J	13 J	3.7	3.7	0.59 J	1.0 U	1.0 U
trans-1,2-Dichloroethene	ug/L	100	25 U	1.6 J	1.7	2.1	1.7	10 U	1.7 J	2.2	4.5	1.9	1.0 U	1.0 U
trans-1,3-Dichloropropene	ug/L	1	25 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	ug/L	1	25 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	ug/L	1	25 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Xylenes (total)	ug/L	1000	1100	260 J	140	130	92	100	340	53	25	1.2 J	2.0 U	2.0 U
Total VOCs	ug/L	--	6252.6	2401.3	1190.96	1537.47	2342.86	2226.5	4263.2	2266.63	1381.74	231.24	9.04	2.2
Metals														
Arsenic	ug/L	--	15.2	12.5	13.6	10.7	12.1	17.4	14.3	17.6	15.8	14.4	10.4	10.4
Manganese	ug/L	--	1410	930	817	886	1010	1110	1040	1030	787	738	349	369
Potassium	ug/L	--	-	-	-	-	-	7910	-	-	-	-	-	-
General Chemistry														
Ammonia	mg/L	--	-	-	-	-	-	4.3	-	-	-	-	-	-
Chloride	mg/L	--	-	-	-	-	-	255	-	-	-	-	-	-
Nitrate (as N)	mg/L	--	-	-	-	-	-	0.10 U	-	-	-	-	-	-
Nitrite (as N)	mg/L	--	-	-	-	-	-	0.10 U	-	-	-	-	-	-
Orthophosphate	mg/L	--	-	-	-	-	-	0.15	-	-	-	-	-	-
Field Parameters														
Conductivity, field	umhos/cm	--	1800	1480	1440	1470	2040	1370	1470	1430	1240	1270	756	863
Dissolved oxygen (DO), field	mg/L	--	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12.56	14.50
Ferrous iron	mg/L	--	6.4	5.8	1.5	5.8	8.0	5.0	5.4	2.2	4.4	3.9	10.6	9.8
Iron	mg/L	--	19.6	20.1	15.4	15.0	19.0	16.2	18.0	4.0	15.6	15.0	23.0	19.6
Oxidation reduction potential (ORP), field	millivolts	--	-127	-93	-116	-86	-150	-136	-113	-89	-84	-146	210	200
pH, field	s.u.	--	6.35	6.46	6.37	6.45	6.31	6.39	6.56	6.34	6.22	6.32	4.61	4.32
Temperature, field	deg C	--	15.6	13.6	15.7	15.4	16.7	15.6	13.4	15.3	15.4	16.3	15.6	13.2
Turbidity	NTU	--	33	150	52	130	13	0	63	174	54	17	999 >	999 >

Notes:

< - Less than amount shown.

> - Greater than amount shown.

J - Estimated concentration.

U - Not detected at the associated reporting limit.

UJ - Not detected; associated reporting limit is estimated.

- Not applicable.

TABLE 1

GROUNDWATER ANALYTICAL RESULTS
NJGWS COMPARISON
JIS LANDFILL SITE

Sample Location:	MP-6D 4/24/2014	MP-6D 7/25/2014	MP-6D 10/15/2014	MW-5 10/14/2013	MW-5 2/4/2014	MW-5 2/4/2014 Duplicate	MW-5 4/25/2014	MW-5 7/24/2014	MW-5 10/15/2014	MW-6S 4/9/2014	MW-7S 4/9/2014	MW-7S 4/9/2014 Duplicate	
Parameter													
Volatiles													
1,1,1-Trichloroethane													
1,1,2-Tetrachloroethane													
1,1,2-Trichloroethane													
1,1-Dichloroethane													
1,1-Dichloroethene													
1,2,4-Trichlorobenzene													
1,2-Dichlorobenzene													
1,2-Dichloroethane													
1,2-Dichloropropane													
1,3-Dichlorobenzene													
1,4-Dichlorobenzene													
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)													
Acetone													
Benzene													
Bromodichloromethane													
Bromoform													
Bromomethane (Methyl bromide)													
Carbon tetrachloride													
Chlorobenzene													
Chloroethane													
Chloroform (Trichloromethane)													
Chloromethane (Methyl chloride)													
cis-1,2-Dichloroethene													
cis-1,3-Dichloropropene													
Cyclohexane													
Dibromochloromethane													
Dichlorodifluoromethane (CFC-12)													
Ethylbenzene													
Hexane													
Methylene chloride													
Tetrachloroethene													
Toluene													
trans-1,2-Dichloroethene													
trans-1,3-Dichloropropene													
Trichloroethene													
Vinyl chloride													
Xylenes (total)													
Total VOCs	ug/L	2.02	1.79	5.04	18658	18008.6	17741.7	25543.92	46943.3	38526.6	0.62	127.5	122.04
Metals													
Arsenic													
Manganese													
Potassium													
General Chemistry													
Ammonia													
Chloride													
Nitrate (as N)													
Nitrite (as N)													
Orthophosphate													
Field Parameters													
Conductivity, field													
Dissolved oxygen (DO), field													
Ferrous iron													
Iron													
Oxidation reduction potential (ORP), field													
pH, field													
Temperature, field													
Turbidity													

Notes:

< - Less than amount shown.

> - Greater than amount shown.

J - Estimated concentration.

U - Not detected at the associated reporting limit.

UI - Not detected; associated reporting limit is estimated.

- Not applicable.

TABLE 1

GROUNDWATER ANALYTICAL RESULTS
NJGWS COMPARISON
JIS LANDFILL SITE

Sample Location:	MW-10I 4/9/2014	MW-18S 4/9/2014	MW-20I 4/10/2014	MW-20D 4/10/2014	MW-21I 4/10/2014	MW-21D 4/10/2014	MW-22I 4/9/2014	MW-22D 4/9/2014	MW-23I 4/10/2014	MW-23D 4/10/2014	MW-25I 4/10/2014
Parameter											
Units											
Volatiles											
1,1,1-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.41 I	1.0 U	1.0 U
1,1,2,2-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	ug/L	0.27 J	1.0 U	0.16 J	1.0 U	0.56 J	0.86 J	0.22 J	0.55 J	1.0 U	1.0 U
1,1-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	0.58 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	ug/L	0.37 J	1.0 U	0.51 J	0.73 J	1.0 U	1.0 U	1.0 U	1.0 U	0.37 J	1.0 U
1,2-Dichloroethane	ug/L	1.0 U	1.0 U	0.47 J	0.44 J	1.0 U	0.30 J	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	ug/L	1.0 U	0.61 J	0.26 J	0.31 J	0.29 J	0.45 J	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	ug/L	1.4	1.0 U	0.40 J	0.60 J	1.0 U	1.0 U	1.0 U	1.0 U	0.98 J	1.0 U
1,4-Dichlorobenzene	ug/L	6.3	1.0 U	4.1	6.4	1.0 U	1.0 U	1.0 U	0.85 J	0.64 J	12
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Acetone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	ug/L	2.5	1.0 U	0.60 J	0.42 J	1.5	0.58 J	1.0 U	0.14 J	0.81 J	0.54 J
Bromodichloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane (Methyl bromide)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon tetrachloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	ug/L	7.9	1.0 U	2.7	2.2	1.0 U	1.0 U	1.0 U	1.0 U	2.2	1.0 U
Chloroethane	ug/L	3.1	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform (Trichloromethane)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	0.18 J	1.7	0.33 J	1.0 U	0.15 J	1.0 U
Chloromethane (Methyl chloride)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	ug/L	0.29 J	1.0 U	1.4	0.81 J	1.5	1.2	0.25 J	1.0 U	0.19 J	1.0 U
cis-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Cyclohexane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibromochloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dichlorodifluoromethane (CFC-12)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	0.83 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Hexane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methylene chloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	ug/L	1.0 U	1.0 U	0.15 J	0.22 J	1.0 U	0.12 J	1.0 U	1.0 U	0.47 J	1.0 U
Toluene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.20 J	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	ug/L	0.25 J	1.0 U	0.56 J	0.43 J	1.0 U	1.0 U	1.0 U	1.0 U	0.21 J	1.0 U
trans-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	ug/L	1.0 U	1.0 U	0.60 J	0.59 J	6.2	6.3	2.1	0.28 J	0.54 J	0.17 J
Vinyl chloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Xylenes (total)	ug/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Total VOCs	ug/L	22.38	0.61	11.91	13.73	10.23	12.54	2.9	1.82	2.55	16.49
Metals											
Arsenic	ug/L	6.0	2.5 U	2.5 U	2.5 U	2.2 J	2.5 U	2.5 U	4.0	2.5 U	8.8
Manganese	ug/L	346	724	131	256	20.7	50.7	101	375	47.4	543
Potassium	ug/L	-	-	-	-	-	-	-	-	-	-
General Chemistry											
Ammonia	mg/L	-	-	-	-	-	-	-	-	-	-
Chloride	mg/L	-	-	-	-	-	-	-	-	-	-
Nitrate (as N)	mg/L	-	-	-	-	-	-	-	-	-	-
Nitrite (as N)	mg/L	-	-	-	-	-	-	-	-	-	-
Orthophosphate	mg/L	-	-	-	-	-	-	-	-	-	-
Field Parameters											
Conductivity, field	umhos/cm	1250	1110	231	241	170	292	345	723	243	1010
Dissolved oxygen (DO), field	mg/L	0.16	4.69	0.00	0.00	0.00	2.15	0.00	2.00	0.00	0.00
Ferrous iron	mg/L	4.6	0.0	0.0	2.6	1.5	0.0	3.4	0.0	2.0	2.0
Iron	mg/L	6.0	0.3	2.2	4.0	7.0	6.0	0.0	8.5	2.1	10.0
Oxidation reduction potential (ORP), field	millivolts	-58	221	325	151	60	175	141	-44	219	-109
pH, field	s.u.	6.27	5.26	4.40	4.87	4.94	4.33	4.16	6.09	3.93	6.48
Temperature, field	deg C	15.3	14.1	12.4	12.2	14.3	14.4	14.0	13.3	14.0	12.6
Turbidity	NTU	19	28	98	230	0	0	0	0	0	15

Notes:

< - Less than amount shown.

> - Greater than amount shown.

J - Estimated concentration.

U - Not detected at the associated reporting limit.

UJ - Not detected; associated reporting limit is estimated.

- Not applicable.

TABLE 1

GROUNDWATER ANALYTICAL RESULTS
NJGWS COMPARISON
JIS LANDFILL SITE

Sample Location:	MW-25D 4/10/2014	MW-30I 4/10/2014	MW-30D 4/10/2014	MW-32I 4/10/2014	MW-32I 4/10/2014 Duplicate	MW-32D 4/10/2014	MW-33I 4/10/2014	MW-34I 4/8/2014	MW-34D 4/9/2014	MW-42S 4/8/2014	MW-42I 4/8/2014	MW-42D 4/8/2014
Parameter	Units											
Volatiles												
1,1,1-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.33 J	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	ug/L	1.0 U	1.0 U	0.51 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.8	1.0 U	1.0 U
1,2-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.8	1.0 U	1.0 U
1,2-Dichloropropane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.79 J	0.24 J	1.0 U
1,2-Dichloropropane	ug/L	1.0 U	1.0 U	0.19 J	1.0 U	1.0 U	0.25 J	1.0 U				
1,3-Dichlorobenzene	ug/L	1.0 U	1.0 U	0.15 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.2	1.0 U	1.0 U
1,4-Dichlorobenzene	ug/L	1.0 U	1.0 U	2.1	1.0 U	1.0 U	0.32 J	1.0 U	1.0 U	23	1.0 U	1.0 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Acetone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	ug/L	1.0 U	1.0 U	2.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.3	1.0 U	1.0 U
Bromodichloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane (Methyl bromide)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon tetrachloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	7.5	1.0 U	1.0 U
Chloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.48 J	1.0 U	1.0 U
Chloroform (Trichloromethane)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane (Methyl chloride)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	ug/L	1.0 U	0.19 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.3	0.44 J	1.0 U
cis-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Cyclohexane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.51 J	1.0 U	1.0 U
Dibromochloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dichlorodifluoromethane (CFC-12)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Hexane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methylene chloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	ug/L	0.20 J	0.88 J	0.28 J	0.12 J	0.20 J	0.29 J	1.0 U	1.0 U	0.16 J	1.0 U	1.0 U
Toluene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.24 J	0.20 J	1.0 U	1.0 U
trans-1,2-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.6	1.0 U	1.0 U
trans-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	ug/L	1.0 U	0.21 J	1.0 U	1.0 U	1.0 U	1.0 U	0.13 J	1.0 U	1.0 U	0.52 J	0.10 J
Vinyl chloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.7	1.0 U	1.0 U
Xylenes (total)	ug/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Total VOCs	ug/L	0.2	1.28	5.23	0.12	0.2	0.99	ND	0.24	52.19	0.78	ND
Metals												
Arsenic	ug/L	2.5 U	2.7	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Manganese	ug/L	82.9	126	192	89.9	90.1	87.7	20.9	40.5	547	81.7	11.5
Potassium	ug/L	-	-	-	-	-	-	-	-	-	-	-
General Chemistry												
Ammonia	mg/L	-	-	-	-	-	-	-	-	-	-	-
Chloride	mg/L	-	-	-	-	-	-	-	-	-	-	-
Nitrate (as N)	mg/L	-	-	-	-	-	-	-	-	-	-	-
Nitrite (as N)	mg/L	-	-	-	-	-	-	-	-	-	-	-
Orthophosphate	mg/L	-	-	-	-	-	-	-	-	-	-	-
Field Parameters												
Conductivity, field	umhos/cm	329	411	285	252	252	259	209	190	683	1260	407
Dissolved oxygen (DO), field	mg/L	2.79	19.30	1.51	4.13	4.13	0.98	0.00	7.39	0.00	9.04	12.65
Ferrous iron	mg/L	0.5	0.0	0.0	0.0	0.0	0.0	2.4	0.0	3.5	0.0	0.0
Iron	mg/L	0.8	1.6	1.0	0.2	0.2	0.0	3.0	2.4	7.0	6.5	2.0
Oxidation reduction potential (ORP), field	millivolts	190	329	314	353	353	377	35	202	-51	105	128
pH, field	s.u.	3.62	4.38	3.92	4.22	4.22	4.02	3.53	4.25	6.14	6.31	5.35
Temperature, field	deg C	14.4	12.9	12.7	13.1	13.1	12.6	12.0	13.4	15.3	15.0	14.9
Turbidity	NTU	53	680	94	70	70	7	47	0	0	230	460

Notes:

< - Less than amount shown.

> - Greater than amount shown.

J - Estimated concentration.

U - Not detected at the associated reporting limit.

UI - Not detected; associated reporting limit is estimated.

- Not applicable.

TABLE 1

GROUNDWATER ANALYTICAL RESULTS
NJGWS COMPARISON
JIS LANDFILL SITE

Sample Location:	MW-43S 10/14/2013	MW-43S 2/4/2014	MW-43S 4/24/2014	MW-43S 7/24/2014	MW-43S 7/24/2014 Duplicate	MW-43S 10/16/2014	MW-43I 10/14/2013	MW-43I 2/4/2014	MW-43I 4/24/2014	MW-43I 7/24/2014	MW-43I 10/16/2014	MW-43D 10/14/2013	MW-43D 2/4/2014
Parameter													
Volatiles													
1,1,1-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Tetrachloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.24 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	ug/L	1.0 U	1.8 J	1.1	1.5	1.5	2.3	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	ug/L	1.0 U	1.0 U	0.51 J	0.55 J	0.54 J	0.83 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.32 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MBK)	ug/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Acetone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	ug/L	1.0 U	1.0 U	1.0 U	0.19 J	0.16 J	2.6	1.0 U	1.0 U	1.0 U	0.35 J	1.0 U	1.0 U
Bromodichloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane (Methyl bromide)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon tetrachloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.34 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform (Trichloromethane)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane (Methyl chloride)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Cyclohexane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibromochloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dichlorodifluoromethane (CFC-12)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.66 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Hexane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methylene chloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.13 J	0.11 J	0.11 J	1.0 U	1.0 U	0.82 J
Toluene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.13 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.87 J
Vinyl chloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Xylenes (total)	ug/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	1.6 J	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Total VOCs	ug/L	ND	1.8	1.61	2.24	2.2	8.7	0.32	ND	0.35	0.64	0.4	1.86
Metals													
Arsenic	ug/L	3.6	3.7	7.4	2.4 J	2.1 J	2.5 U	2.3 J	2.5 U	3.1	2.4 J	2.5 U	2.5 U
Manganese	ug/L	32.8	34.1	78.5	16.1	13.2	10.0 U	40.5	20.1	22.9	27.4	13.6	148
Potassium	ug/L	-	-	-	-	-	-	-	-	-	-	-	-
General Chemistry													
Ammonia	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Nitrate (as N)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Nitrite (as N)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Orthophosphate	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Field Parameters													
Conductivity, field	umhos/cm	3310	3250	3360	3260	-	3150	999	999	844	999	704	496
Dissolved oxygen (DO), field	mg/L	11.58	8.77	13.30	12.98	-	13.11	4.38	7.80	14.55	4.55	15.73	11.61
Ferrous iron	mg/L	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.2	0.0	0.1	0.0
Iron	mg/L	2.0	1.2	0.6	1.0	-	0.8	2.6	5.0	1.8	2.7	2.0	2.2
Oxidation reduction potential (ORP), field	millivolts	143	106	151	42	-	76	171	165	204	28	117	316
pH, field	s.u.	7.41	7.28	7.76	7.73	-	7.80	6.11	6.10	6.49	6.88	6.62	4.80
Temperature, field	deg C	17.7	14.0	17.0	16.8	-	16.6	17.0	15.0	15.8	16.6	16.8	15.1
Turbidity	NTU	180	486	708	142	-	64	141	302	320	453	95	165

Notes:

< - Less than amount shown.

> - Greater than amount shown.

J - Estimated concentration.

U - Not detected at the associated reporting limit.

UJ - Not detected; associated reporting limit is estimated.

- Not applicable.

TABLE 1

GROUNDWATER ANALYTICAL RESULTS
NJGWQS COMPARISON
JIS LANDFILL SITE

Sample Location:	MW-43D 4/24/2014	MW-43D 7/24/2014	MW-43D 10/15/2014	MW-44S 10/15/2013	MW-44S 2/7/2014	MW-44S 4/24/2014	MW-44S 7/24/2014	MW-44S 10/17/2014	MW-44I 10/15/2013	MW-44I 2/7/2014	MW-44I 4/24/2014	MW-44I 4/24/2014	MW-44I 7/24/2014
Sample Date:													Duplicate
Parameter	Units												
Volatiles													
1,1,1-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Tetrachloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MBK)	ug/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Acetone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	0.19 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane (Methyl bromide)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon tetrachloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform (Trichloromethane)	ug/L	0.10 J	0.11 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane (Methyl chloride)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	ug/L	0.25 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Cyclohexane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibromochloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dichlorodifluoromethane (CFC-12)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	0.11 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Hexane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methylene chloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	ug/L	0.92 J	0.58 J	2.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	ug/L	0.69 J	0.49 J	0.47 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.09 J
Vinyl chloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Xylenes (total)	ug/L	2.0 U	2.0 U	2.0 U	2.0 U	0.44 J	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Total VOCs	ug/L	1.96	1.18	2.47	ND	0.74	ND	ND	ND	0.53	ND	ND	0.099
Metals													
Arsenic	ug/L	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	3.0	2.5 U	2.5 U	2.5 U
Manganese	ug/L	141	197	149	10.0 U	10.0 U	40.3	39.9	16.7	109	2240	195	215
Potassium	ug/L	-	-	-	-	-	-	-	-	-	-	-	-
General Chemistry													
Ammonia	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Nitrate (as N)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Nitrite (as N)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Orthophosphate	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Field Parameters													
Conductivity, field	umhos/cm	455	759	628	1240	1470	1540	1460	1580	968	950	900	900
Dissolved oxygen (DO), field	mg/L	20	11.98	20 >	4.61	4.42	5.76	6.44	7.99	13.58	14.07	15.98	11.67
Ferrous iron	mg/L	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Iron	mg/L	1.4	2.8	2.2	2.0	0.1	4.0	3.5	2.2	1.6	0.8	2.0	2.8
Oxidation reduction potential (ORP), field	millivolts	312	155	226	150	54	85	57	158	249	79	136	111
pH, field	s.u.	4.86	4.92	4.40	6.60	7.14	6.95	7.02	6.99	5.59	6.40	6.35	6.12
Temperature, field	deg C	15.9	16.7	17.5	18.8	13.4	17.3	18.0	17.4	17.4	12.2	16.4	16.7
Turbidity	NTU	100	150	200	18	18	127	48	27	74	310	296	343

Notes:

< - Less than amount shown.

> - Greater than amount shown.

J - Estimated concentration.

U - Not detected at the associated reporting limit.

UJ - Not detected; associated reporting limit is estimated.

- Not applicable.

TABLE 1

GROUNDWATER ANALYTICAL RESULTS
NJGWS COMPARISON
JIS LANDFILL SITE

Sample Location:	MW-44I	MW-44D	MW-44D	MW-44D	MW-44D	MW-44D	MW-45S	MW-45I	MW-45D	MW-46S	MW-46I	MW-46D	MW-47S	
Sample Date:	10/17/2014	10/15/2013	2/7/2014	4/24/2014	7/24/2014	10/17/2014	4/8/2014	4/8/2014	4/8/2014	4/11/2014	4/25/2014	4/25/2014	4/17/2014	
Parameter														
Volatiles														
1,1,1-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Tetrachloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 J	0.18 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.21 J
1,4-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	0.30 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MBK)	ug/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Acetone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	0.11 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane (Methyl bromide)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon tetrachloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform (Trichloromethane)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane (Methyl chloride)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	25
cis-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Cyclohexane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibromochloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dichlorodifluoromethane (CFC-12)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.38 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Hexane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methylene chloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	ug/L	1.1	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.22 J	0.63 J	1.0 U	1.0 U	0.59 J	0.71 J	
Toluene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.21 J
trans-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.14 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	ug/L	1.0 U	1.0 U	0.37 J	1.0 U	1.0 U	1.0 U	-	-	1.0 U	0.13 J	1.0 U	1.0 U	2.4
Vinyl chloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Xylenes (total)	ug/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Total VOCs	ug/L	1.1	ND	0.37	ND	0.11	0.44	ND	0.72	1.19	0.13	1	0.59	28.53
Metals														
Arsenic	ug/L	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.4 J	2.4 J	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Manganese	ug/L	433	286	166	150	153	128	26.5	132	47.5	93.8	728	10.0 U	114
Potassium	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-
General Chemistry														
Ammonia	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrate (as N)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrite (as N)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-
Orthophosphate	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-
Field Parameters														
Conductivity, field	umhos/cm	985	902	1000	848	655	433	1230	652	1020	982	1260	422	999
Dissolved oxygen (DO), field	mg/L	17.18	17.19	16.83	12.80	5.41	20 >	13.45	18.50	20	0.00	7.80	20	1.33
Ferrous iron	mg/L	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Iron	mg/L	1.5	1.2	1.0	-	0.8	1.5	1.0	1.0	0.2	2.0	2.1	0.7	4.5
Oxidation reduction potential (ORP), field	millivolts	220	441	312	299	177	362	125	202	195	74	104	164	157
pH, field	s.u.	5.99	3.42	3.88	3.50	3.83	3.25	7.19	6.06	6.37	8.06	6.37	6.00	5.69
Temperature, field	deg C	17.5	18.3	13.2	16.0	17.4	16.4	15.9	15.8	15.1	16.5	15.6	14.1	
Turbidity	NTU	73	108	91	553	190	34	230	170	56	0	51	69	313

Notes:

< - Less than amount shown.

> - Greater than amount shown.

J - Estimated concentration.

U - Not detected at the associated reporting limit.

UJ - Not detected; associated reporting limit is estimated.

- Not applicable.

TABLE 1

GROUNDWATER ANALYTICAL RESULTS
NJGWS COMPARISON
JIS LANDFILL SITE

Sample Location:	MW-47I 4/17/2014	MW-47D 4/17/2014	MW-48S 4/17/2014	MW-48I 4/22/2014	MW-48D 4/22/2014	MW-49S 10/15/2013	MW-49S 2/6/2014	MW-49S 4/22/2014	MW-49S 7/25/2014	MW-49S 10/16/2014	MW-49S 10/16/2014 Duplicate	MW-49I 10/16/2013	MW-49I 2/6/2014	
Parameter														
Volatiles														
1,1,1-Trichloroethane														
1,1,2-Tetrachloroethane														
1,1,2-Trichloroethane														
1,1-Dichloroethane														
1,1-Dichloroethene														
1,2,4-Trichlorobenzene														
1,2-Dichlorobenzene														
1,2-Dichloroethane														
1,2-Dichloropropane														
1,3-Dichlorobenzene														
1,4-Dichlorobenzene														
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MBK)														
Acetone														
Benzene														
Bromodichloromethane														
Bromoform														
Bromomethane (Methyl bromide)														
Carbon tetrachloride														
Chlorobenzene														
Chloroethane														
Chloroform (Trichloromethane)														
Chloromethane (Methyl chloride)														
cis-1,2-Dichloroethene														
cis-1,3-Dichloropropene														
Cyclohexane														
Dibromochloromethane														
Dichlorodifluoromethane (CFC-12)														
Ethylbenzene														
Hexane														
Methylene chloride														
Tetrachloroethene														
Toluene														
trans-1,2-Dichloroethene														
trans-1,3-Dichloropropene														
Trichloroethene														
Vinyl chloride														
Xylenes (total)														
Total VOCs	ug/L	33.97	ND	ND	ND	ND	14.12	12.41	14.31	7.57	14.98	14.86	ND	0.74
Metals														
Arsenic	ug/L	2.5 U	2.1 J	2.3 J	3.1	2.5 U	4.6	4.0	5.2	4.6	4.1	4.3	2.5 U	2.5 U
Manganese	ug/L	134	39.3	66.9	66.0	80.5	249	256	297	260	261	251	8.8 J	10.0
Potassium	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-
General Chemistry														
Ammonia	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrate (as N)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrite (as N)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-
Orthophosphate	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-
Field Parameters														
Conductivity, field	umhos/cm	999	340	930	920	594	2290	2440	2360	2390	2380	-	920	928
Dissolved oxygen (DO), field	mg/L	9.96	12.51	9.82	9.32	1.65	0.00	0.00	0.00	0.00	0.00	-	9.79	9.48
Ferrous iron	mg/L	0.0	0.0	0.0	0.4	0.0	2.0	4.8	1.0	5.6	3.3	-	0.0	0.0
Iron	mg/L	2.5	0.0	13.0	13.5	0.0	25.0	20.4	5.6	14.0	14.8	-	7.0	1.2
Oxidation reduction potential (ORP), field	millivolts	203	227	149	195	499	-133	-110	-154	-88	-161	-	147	104
pH, field	s.u.	5.08	4.26	5.83	5.84	3.74	6.51	7.07	6.75	6.74	6.89	-	6.52	6.61
Temperature, field	deg C	13.8	14.1	14.9	15.5	16.5	17.8	14.5	16.9	16.5	16.9	-	16.7	14.1
Turbidity	NTU	785	999	269	407	179	48	62	0	19	29	-	51	150

Notes:

< - Less than amount shown.

> - Greater than amount shown.

J - Estimated concentration.

U - Not detected at the associated reporting limit.

UJ - Not detected; associated reporting limit is estimated.

- Not applicable.

TABLE 1

GROUNDWATER ANALYTICAL RESULTS
NJGWS COMPARISON
JIS LANDFILL SITE

Sample Location:	MW-49I	MW-49I	MW-49I	MW-49D	MW-49D	MW-49D	MW-49D	MW-49D	MW-50S	MW-50S	MW-50S	MW-50S	MW-50S	
Sample Date:	4/22/2014	7/25/2014	10/16/2014	10/15/2013	2/6/2014	4/22/2014	7/25/2014	10/16/2014	10/16/2013	10/16/2013	2/6/2014	4/17/2014	7/25/2014	
Parameter	Units													
Volatiles														
1,1,1-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Tetrachloroethane	ug/L	1.0 U	1.0 U	1.0 U	0.27 J	0.32 J	0.32 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	0.48 J	1.0 U	0.44 J	0.53 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	0.65 J	0.53 J	0.69 J	0.52 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.18 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MBK)	ug/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Acetone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	0.10 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.34 J	1.0 U	1.0 U
Bromodichloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane (Methyl bromide)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon tetrachloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform (Trichloromethane)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	0.26 J	0.27 J	0.30 J	0.13 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane (Methyl chloride)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	0.44 J	0.37 J	0.24 J	0.24 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Cyclohexane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibromochloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dichlorodifluoromethane (CFC-12)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	ug/L	1.0 U	1.0 U	0.39 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Hexane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methylene chloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	ug/L	1.0 U	1.0 U	1.0 U	0.84 J	0.55 J	1.0 U	1.0 U	0.82 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	0.51 J	0.88 J	0.76 J	0.93 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	ug/L	0.55 J	0.41 J	0.51 J	0.88 J	0.76 J	0.93 J	0.76 J	0.74 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Xylenes (total)	ug/L	2.0 U	2.0 U	1.1 J	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	0.43 J	2.0 U	2.0 U
Total VOCs	ug/L	0.55	0.41	3.2	2.47	3.08	4.36	3.89	2.63	ND	ND	0.77	ND	ND
Metals														
Arsenic	ug/L	2.5 U	2.5 U	2.5 U	2.1 J	2.5 U	2.6	3.8	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Manganese	ug/L	10.2	10.0 U	10.0 U	291	326	321	308	264	49.6	54.9	29.3	38.1	33.0
Potassium	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-
General Chemistry														
Ammonia	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrate (as N)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrite (as N)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-
Orthophosphate	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-
Field Parameters														
Conductivity, field	umhos/cm	900	1180	1010	359	396	308	330	361	999	999	999	951	1060
Dissolved oxygen (DO), field	mg/L	9.00	7.67	12.42	20 >	15.38	13.80	11.31	20 >	9.32	9.32	6.02	9.84	9.94
Ferrous iron	mg/L	0.0	0.0	0.0	0.1	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Iron	mg/L	1.8	1.4	1.0	1.8	1.0	27.0	4.0	1.5	0.0	0.0	2.0	1.4	1.0
Oxidation reduction potential (ORP), field	millivolts	134	105	153	234	245	342	199	306	166	166	117	110	86
pH, field	s.u.	6.65	6.99	7.11	4.07	3.86	3.99	4.50	3.86	6.50	6.50	6.35	6.79	6.87
Temperature, field	deg C	16.2	16.0	16.7	16.3	13.4	16.8	18.2	16.1	16.4	16.4	15.6	15.6	16.6
Turbidity	NTU	113	120	58	130	160	577	430	140	27	27	100	15	0

Notes:

- < - Less than amount shown.
- > - Greater than amount shown.
- J - Estimated concentration.
- U - Not detected at the associated reporting limit.
- UJ - Not detected; associated reporting limit is estimated.
- Not applicable.

TABLE 1

GROUNDWATER ANALYTICAL RESULTS
NJGWS COMPARISON
JIS LANDFILL SITE

Sample Location:	MW-50S	MW-50I	MW-50I	MW-50I	MW-50I	MW-50I	MW-50I	MW-50D	MW-50D	MW-50D	MW-50D	MW-50D	MW-50D	MW-51S
Sample Date:	10/17/2014	10/16/2013	2/6/2014	4/17/2014	Duplicate	4/17/2014	7/25/2014	10/17/2014	10/16/2013	2/6/2014	4/17/2014	7/25/2014	10/17/2014	4/17/2014
Parameter														
Volatiles														
1,1,1-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Tetrachloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	0.31 J	1.0 U	1.0 U	0.55 J	0.39 J	0.61 J	1.0	1.0 U	1.0 U
1,1-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	ug/L	1.0 U	0.75 J	0.90 J	0.86 J	1.0	0.35 J	0.32 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	ug/L	1.0 U	4.6	5.0	4.4	4.8	1.5	1.8	0.58 J	1.0 U	1.0 U	0.24 J	0.30 J	1.0 U
1,4-Dichlorobenzene	ug/L	1.0 U	7.2	7.3	6.2	6.8	5.5	5.4	0.71 J	1.0 U	1.0 U	0.89 J	0.52 J	1.0 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MBK)	ug/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Acetone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	ug/L	1.0 U	200	21	8.8	9.3	210	410	0.70 J	1.0 U	1.0 U	2.9	0.48 J	1.0 U
Bromodichloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane (Methyl bromide)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon tetrachloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	ug/L	1.0 U	18	41	41	44	9.5	7.4	1.4	1.0 U	1.0 U	2.4	1.4	1.0 U
Chloroethane	ug/L	1.0 U	8.4	10	5.4	5.8	15	14	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform (Trichloromethane)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane (Methyl chloride)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	ug/L	1.0 U	0.92 J	1.0 U	1.0 U	0.36 J	0.19 J	5.9	5.4	3.0	2.2	0.88 J	1.0 U	1.0 U
cis-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Cyclohexane	ug/L	1.0 U	1.7	0.74 J	0.41 J	0.43 J	1.0 U	1.3	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibromochloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dichlorodifluoromethane (CFC-12)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	ug/L	1.0 U	1.4	0.62 J	1.0 U	1.0 U	1.7	3.2	1.0 U	1.0 U	0.50 J	1.0 U	1.0 U	1.0 U
Hexane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methylene chloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	ug/L	1.0 U	0.30 J	0.30 J	0.23 J	0.24 J	0.49 J	0.57 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	0.25 J	0.25 J	1.0	1.1	1.0 U	0.35 J	0.38 J	0.65 J	0.62 J	1.0 U
trans-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	ug/L	1.0 U	0.49 J	1.0 U	1.0 U	0.56 J	0.19 J	5.9	5.6	3.6	1.9	1.7	0.24 J	1.0 U
Vinyl chloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Xylenes (total)	ug/L	2.0 U	1.3 J	0.48 J	2.0 U	2.0 U	8.3	9.3	2.0 U	2.0 U	2.0 U	1.8 J	2.0 U	2.0 U
Total VOCs	ug/L	ND	245.06	87.34	67.55	72.62	254.57	454.77	15.19	11.9	7.37	14.09	6.9	0.24
Metals														
Arsenic	ug/L	2.5 U	5.6	5.5	4.9	4.9	3.2	4.5	4.9	3.4	6.3	2.5	2.3 J	2.5 U
Manganese	ug/L	59.1	355	425	323	344	299	248	90.3	51.2	102	62.3	83.6	11.5
Potassium	ug/L	-	8990	-	-	-	-	-	-	-	-	-	-	-
General Chemistry														
Ammonia	mg/L	-	0.79	-	-	-	-	-	-	-	-	-	-	-
Chloride	mg/L	-	245	-	-	-	-	-	-	-	-	-	-	-
Nitrate (as N)	mg/L	-	0.80	-	-	-	-	-	-	-	-	-	-	-
Nitrite (as N)	mg/L	-	0.10 U	-	-	-	-	-	-	-	-	-	-	-
Orthophosphate	mg/L	-	0.029 J	-	-	-	-	-	-	-	-	-	-	-
Field Parameters														
Conductivity, field	umhos/cm	1060	1180	1190	1120	960	1250	976	460	445	590	644	1010	
Dissolved oxygen (DO), field	mg/L	9.41	0.70	2.33	3.60	3.60	0.98	2.56	9.59	16.23	20	17.11	12.72	14.67
Ferrous iron	mg/L	0.0	7.0	11.5	10.8	10.8	4.0	2.4	0.0	0.1	0.0	0.1	0.0	
Iron	mg/L	1.2	21.0	12.0	30.0	30.0	8.0	9.4	4.0	2.0	4.8	5.0	2.6	1.5
Oxidation reduction potential (ORP), field	millivolts	56	-22	-50	-39	-39	-32	-45	216	94	213	150	122	190
pH, field	s.u.	6.94	6.07	6.44	6.29	6.29	6.16	6.34	5.55	5.96	5.83	5.60	5.74	6.27
Temperature, field	deg C	15.7	16.5	13.9	15.2	15.2	16.9	15.7	16.5	14.1	14.6	16.3	15.1	14.6
Turbidity	NTU	2	44	140	19	19	1	4	187	260	180	15	100	67

Notes:

< - Less than amount shown.

> - Greater than amount shown.

J - Estimated concentration.

U - Not detected at the associated reporting limit.

UJ - Not detected; associated reporting limit is estimated.

- Not applicable.

TABLE 1

GROUNDWATER ANALYTICAL RESULTS
NJGWS COMPARISON
JIS LANDFILL SITE

Sample Location:	MW-51I	MW-51D	MW-52S	MW-52I	MW-52D	MW-52D	MW-53I	MW-53I	MW-53I	MW-53I	MW-54S	MW-54I	MW-54D
Sample Date:	4/17/2014	4/17/2014	4/8/2014	4/8/2014	4/8/2014	Duplicate	10/14/2013	4/25/2014	7/24/2014	10/15/2014	4/8/2014	4/8/2014	4/8/2014
Parameter	Units												
Volatiles													
1,1,1-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Tetrachloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	ug/L	0.26 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	ug/L	1.0 U	1.0 U	0.29 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MBK)	ug/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Acetone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane (Methyl bromide)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon tetrachloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	ug/L	1.0 U	1.0 U	0.26 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform (Trichloromethane)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane (Methyl chloride)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	ug/L	1.0 U	1.0 U	0.99 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Cyclohexane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibromochloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dichlorodifluoromethane (CFC-12)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.25 J	0.95 J	2.7
Ethylbenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Hexane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methylene chloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	ug/L	1.0 U	0.24 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.22 J	0.72 J	2.2
Toluene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	ug/L	0.11 J	1.0 U	0.28 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Xylenes (total)	ug/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Total VOCs	ug/L	0.37	0.24	1.82	ND	ND	ND	ND	ND	ND	0.47	1.67	4.9
Metals													
Arsenic	ug/L	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Manganese	ug/L	20.9	9.1 J	152	63.3	44.5	45.8	17.9	23.3	11.1	15.7	10.0 U	257
Potassium	ug/L	-	-	-	-	-	-	-	-	-	-	-	-
General Chemistry													
Ammonia	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Nitrate (as N)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Nitrite (as N)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Orthophosphate	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Field Parameters													
Conductivity, field	umhos/cm	1380	711	990	254	253	253	464	485	240	220	1250	1050
Dissolved oxygen (DO), field	mg/L	20	14.71	9.45	14.28	4.01	4.01	0.00	0.04	0.00	0.00	13.24	10.95
Ferrous iron	mg/L	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.2	0.0
Iron	mg/L	1.2	4.4	0.0	0.0	0.3	0.3	1.4	0.9	0.8	0.8	0.6	2.6
Oxidation reduction potential (ORP), field	millivolts	182	118	245	360	343	343	-7	120	103	114	86	93
pH, field	s.u.	6.84	6.46	5.63	4.52	4.37	4.37	6.30	6.58	6.17	7.06	6.62	5.87
Temperature, field	deg C	14.2	14.2	15.6	14.9	14.8	14.8	21.0	18.6	20.3	20.2	15.3	15.3
Turbidity	NTU	29	410	36	4	62	62	0	13	19	11	110	290

Notes:

< - Less than amount shown.

> - Greater than amount shown.

J - Estimated concentration.

U - Not detected at the associated reporting limit.

UJ - Not detected; associated reporting limit is estimated.

- Not applicable.

TABLE 1

GROUNDWATER ANALYTICAL RESULTS
NJGWS COMPARISON
JIS LANDFILL SITE

Sample Location:	MW-55S 4/24/2014	MW-55I 4/24/2014	MW-55D 4/24/2014	MW-56D 4/10/2014	MW-60D 4/10/2014	MW-61D 4/10/2014	MW-66S 4/8/2014	MW-67S 4/9/2014
Parameter	Units							
Volatiles								
1,1,1-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U				
1,1,2,2-Tetrachloroethane	ug/L	1.0 U	1.0 U	1.0 U				
1,1,2-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U				
1,1-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	0.68 J	1.0 U	1.0 U
1,1-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U				
1,2,4-Trichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	2.1	1.0 U	1.0 U
1,2-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	3.2	1.0 U	1.0 U
1,2-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	0.71 J	1.0 U	1.0 U
1,2-Dichloropropane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	0.33 J	1.0 U	1.0 U
1,3-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	5.1	1.0 U	1.0 U
1,4-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	63	0.58 J	1.0 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	5.0 U	5.0 U	5.0 U				
Acetone	ug/L	5.0 U	5.0 U	5.0 U				
Benzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	9.7	0.65 J	1.0 U
Bromodichloromethane	ug/L	1.0 U	1.0 U	1.0 U				
Bromoform	ug/L	1.0 U	1.0 U	1.0 U				
Bromomethane (Methyl bromide)	ug/L	1.0 U	1.0 U	1.0 U				
Carbon tetrachloride	ug/L	1.0 U	1.0 U	1.0 U				
Chlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	59	1.0 U	1.0 U
Chloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	3.4	1.0 U	1.0 U
Chloroform (Trichloromethane)	ug/L	1.0 U	1.0 U	1.0 U				
Chromomethane (Methyl chloride)	ug/L	1.0 U	1.0 U	1.0 U				
cis-1,2-Dichloroethene	ug/L	30	4.0	1.0 U	1.0 U	4.7	1.0 U	1.8
cis-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	0.61 J				
Cyclohexane	ug/L	1.0 U	1.0 U	1.0 U				
Dibromochloromethane	ug/L	1.0 U	1.0 U	1.0 U				
Dichlorodifluoromethane (CFC-12)	ug/L	1.0 U	1.0 U	1.0 U				
Ethylbenzene	ug/L	1.0 U	1.0 U	1.0 U				
Hexane	ug/L	1.0 U	1.0 U	1.0 U				
Methylene chloride	ug/L	1.0 U	1.0 U	1.0 U				
Tetrachloroethene	ug/L	6.8	1.7	1.0 U	1.0 U	0.15 J	0.69 J	1.3
Toluene	ug/L	1.0 U	1.0 U	1.0 U				
trans-1,2-Dichloroethene	ug/L	0.25 J	1.0 U	1.0 U	1.0 U	4.5	1.0 U	1.0 U
trans-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U				
Trichloroethene	ug/L	8.8	1.1	1.0 U	1.0 U	0.55 J	1.0 U	0.69 J
Vinyl chloride	ug/L	0.35 J	1.0 U	1.0 U	1.0 U	1.8	1.0 U	1.0 U
Xylenes (total)	ug/L	2.0 U	2.0 U	2.0 U				
Total VOCs	ug/L	46.2	6.8	ND	ND	158.77	1.38	3.18
Metals								
Arsenic	ug/L	2.5 U	2.5 U	3.9	3.7	2.5 U	2.5 U	2.5 U
Manganese	ug/L	340	82.1	41.0	154	240	175	494
Potassium	ug/L	-	-	-	-	-	-	-
General Chemistry								
Ammonia	mg/L	-	-	-	-	-	-	-
Chloride	mg/L	-	-	-	-	-	-	-
Nitrate (as N)	mg/L	-	-	-	-	-	-	-
Nitrite (as N)	mg/L	-	-	-	-	-	-	-
Orthophosphate	mg/L	-	-	-	-	-	-	-
Field Parameters								
Conductivity, field	umhos/cm	624	648	221	178	436	283	479
Dissolved oxygen (DO), field	mg/L	7.77	14.75	14.50	0.00	0.00	0.00	11.55
Ferrous iron	mg/L	0.0	0.0	0.0	4.8	-	-	0.0
Iron	mg/L	1.0	0.6	2.4	7	-	-	0.0
Oxidation reduction potential (ORP), field	millivolts	304	283	271	-183	145	185	367
pH, field	s.u.	4.78	5.00	4.97	5.88	4.70	4.27	4.36
Temperature, field	deg C	13.4	13.8	14.0	13	13.0	12.5	14.4
Turbidity	NTU	50	250	999	636	999 >	999 >	83

Notes:

< - Less than amount shown.

> - Greater than amount shown.

J - Estimated concentration.

U - Not detected at the associated reporting limit.

U - Not detected; associated reporting limit is estimated.

- Not applicable.

TABLE 2

Page 1 of 2

DISSOLVED OXYGEN CONCENTRATIONS
JIS LANDFILL SITE

Well #	April. 2013 4th-10th	July. 2013 9th-10th	Oct. 2013 14th-16th	Feb. 2014 4th-7th	April. 2014 8th-25th	July. 2014 24th-25th	Oct. 2014 15th-17th
MW-5	0.00	0.10	0.00	0.00	0	0.00	0.00
MP6S-R	0.00	0.04	0.01	0.00	0.00	0.00	0.00
MP6I-R	0.00	0.06	0.00	0.00	0.00	0.00	0.00
MP6D	14.01	14.73	12.56	14.50	17.67	17.01	16.19
MW42S	7.85				9.04		
MW42I	12.28				12.65		
MW42D	4.38				4.59		
MW43S	14.02	13.83	11.58	8.77	13.30	12.98	13.11
MW43I	14.26	10.33	4.38	7.80	14.55	4.55	15.73
MW43D	>20	12.86	11.61	11.85	>20	11.98	>20
MW44S	6.97	5.36	4.61	4.42	5.76	6.44	7.99
MW44I	>20	8.05	13.58	14.07	15.98	11.67	17.18
MW44D	>20	15.23	17.19		12.80	5.41	>20
MW45S	13.17				13.45		
MW45I	13.23				18.50		
MW45D	12.17				>20		
MW46S	0.00				0.00		
MW46I	2.68				7.80		
MW46D	>20				>20		
MW52S	6.30				9.45		
MW52I	14.77				14.28		
MW52D	1.80				4.01		
MW53S	blocked	blocked	blocked	blocked	blocked	blocked	blocked
MW53I	0.00	0.35	0.00	NS	0.04	0.00	0.00
MW53D	blocked	blocked	blocked	blocked	blocked	blocked	blocked
MW54S	10.26				13.24		
MW54I	8.77				10.95		
MW54D	0.00				0.63		
MW55S	6.50				7.77		
MW55I	8.89				14.75		
MW55D	9.78				14.5		
MW6S	N/A				N/A		
MW6D	N/A				N/A		
MW17	N/A				N/A		
MW47S	11.68				1.33		
MW47I	15.26				9.96		
MW47D	16.00				12.51		
MW48S	8.61				9.82		
MW48I	15.76				9.32		
MW48D	13.69				1.65		
MW49S	0.00	0.05	0.00	0.00	0.00	0.00	0.00
MW49I	10.04	11.82	9.79	9.48	9.00	7.67	12.42
MW49D	11.35	17.71	>20	15.38	13.8	11.31	>20
MW50S	8.03	6.50	9.32	6.02	9.84	9.94	9.41
MW50I	1.60	0.00	0.70	2.33	3.60	0.98	2.56
MW50D	13.35	16.10	9.59	16.23	>20	17.11	12.72

TABLE 2

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DISSOLVED OXYGEN CONCENTRATIONS
JIS LANDFILL SITE

Well #	April. 2013 4th-10th	July. 2013 9th-10th	Oct. 2013 14th-16th	Feb. 2014 4th-7th	April. 2014 8th-25th	July. 2014 24th-25th	Oct. 2014 15th-17th
MW51S	9.60				14.67		
MW51I	13.71				>20		
MW51D	13.13				14.71		
MP51	5.41		0				0
MP91	3.35	6.21	5.83			6.21	5.83

TABLE 3

SHALLOW GROUNDWATER ANALYTICAL RESULTS
NJGWSL COMPARISON
JIS LANDFILL

Sample Location:	NJDEP Generic Vapor Intrusion Groundwater		MP-6SR 10/15/2013	MP-6SR 2/4/2014	MP-6SR 4/24/2014	MP-6SR 7/24/2014	MP-6SR 10/15/2014	MW-5 10/14/2013	MW-5 2/4/2014	MW-5 2/4/2014	MW-5 4/25/2014
Sample Date:	Units	Screening Levels								Duplicate	
Parameters											
Volatiles											
1,1,1-Trichloroethane	ug/L	13000	25 U	1.0 U	1.0 U	1.0 U	1.0 U	50 U	1.0 U	1.0 U	1.0 UU
1,1,2-Tetrachloroethane	ug/L	6	25 U	1.0 U	1.0 U	1.0 U	1.0 U	50 U	1.0 U	1.0 U	1.0 UU
1,1,2-Trichloroethane	ug/L	8	25 U	1.0 U	1.0 U	1.0 U	1.0 U	50 U	1.0 U	1.0 U	1.0 UU
1,1-Dichloroethane	ug/L	50	25 U	1.0 U	0.21 J	1.0 U	0.26 J	50 U	1.0 U	1.0 U	1.0 UU
1,1-Dichloroethene	ug/L	260	25 U	1.0 U	1.0 U	1.0 U	1.0 U	50 U	1.0 U	1.0 U	1.0 UU
1,2,4-Trichlorobenzene	ug/L	130	25 U	1.0 U	1.0 U	1.0 U	1.0 U	50 U	1.0 U	1.0 U	1.0 UU
1,2-Dichlorobenzene	ug/L	6800	7.0 J	2.3 J	1.7	1.8	2.1	19 J	20 J	22 J	18 J
1,2-Dichloroethane	ug/L	3	25 U	1.0 U	1.0 U	1.0 U	1.0 U	50 U	1.0 U	1.0 U	1.0 UU
1,2-Dichloropropane	ug/L	4	25 U	1.0 U	1.0 U	1.0 U	1.0 U	50 U	1.0 U	1.0 U	1.0 UU
1,3-Dichlorobenzene	ug/L	--	12 J	4.9 J	4.6	3.5	6.2	23 J	21 J	23 J	21 J
1,4-Dichlorobenzene	ug/L	75	94	45 J	41	42	66	56	45 J	50 J	89 J
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	900000	130 U	5.0 U	5.0 U	5.0 U	5.0 U	250 U	3.5 J	4.2 J	1.7 J
Acetone	ug/L	2100000	130 U	5.0 U	5.0 U	5.0 U	5.1	250 U	5.0 U	5.0 U	5.0 UU
Benzene	ug/L	20	4900	2000 J	950	1300	2100	16000	14000 J	14000	21000
Bromodichloromethane	ug/L	2	25 U	1.0 U	1.0 U	1.0 U	1.0 U	50 U	1.0 U	1.0 U	1.0 UU
Bromoform	ug/L	300	25 U	1.0 U	1.0 U	1.0 U	1.0 U	50 U	1.0 U	1.0 U	1.0 UU
Bromomethane (Methyl bromide)	ug/L	20	25 U	1.0 U	1.0 U	1.0 U	1.0 U	50 U	1.0 U	1.0 U	1.0 UU
Carbon tetrachloride	ug/L	1	25 U	1.0 U	1.0 U	1.0 U	1.0 U	50 U	1.0 U	1.0 U	1.0 UU
Chlorobenzene	ug/L	770	25	20 J	18	20	25	800	620 J	610	450 J
Chloroethane	ug/L	26000	25 U	14 J	7.3	17	16	50 U	33 J	43 J	57 J
Chloroform (Trichloromethane)	ug/L	70	25 U	1.0 U	1.0 U	1.0 U	1.0 U	50 U	1.0 U	1.0 U	1.0 UU
Chlormethane (Methyl chloride)	ug/L	240	25 U	1.0 U	1.0 U	1.0 U	1.0 U	50 U	1.0 U	1.0 U	1.0 UU
cis-1,2-Dichloroethene	ug/L	--	25 U	0.50 J	0.25 J	0.27 J	1.0 U	50 U	1.0 U	1.0 U	1.0 UU
cis-1,3-Dichloropropene	ug/L	7*	25 U	1.0 U	1.0 U	1.0 U	1.0 U	50 U	1.0 U	1.0 U	1.0 UU
Cyclohexane	ug/L	16000	16 J	11 J	9.1	6.3	13	140	31 J	36 J	79 J
Dibromochemicalmethane	ug/L	6	25 U	1.0 U	1.0 U	1.0 U	1.0 U	50 U	1.0 U	1.0 U	1.0 UU
Dichlorodifluoromethane (CFC-12)	ug/L	1000	25 U	1.0 U	1.0 U	1.0 U	1.0 U	50 U	1.0 U	1.0 U	1.0 UU
Ethylbenzene	ug/L	700	94	34 J	13	12	11	120	810 J	720	750
Hexane	ug/L	160	25 U	3.3 J	2.0	1.0 U	1.0 U	50 U	1.8 J	1.0 U	2.6 J
Methylene chloride	ug/L	920	25 U	1.0 U	1.0 U	1.0 U	1.0 U	50 U	2.1 J	2.3 J	2.2 J
Tetrachloroethene	ug/L	31	25 U	1.0 U	1.0 U	1.0 U	1.0 U	50 U	1.0 U	1.0 U	1.0 UU
Toluene	ug/L	330000	4.6 J	4.7 J	2.1	2.5	4.5	50 U	120 J	130 J	170 J
trans-1,2-Dichloroethene	ug/L	520	25 U	1.6 J	1.7	2.1	1.7	50 U	1.2 J	1.2 J	3.2 J
trans-1,3-Dichloropropene	ug/L	7*	25 U	1.0 U	1.0 U	1.0 U	1.0 U	50 U	1.0 U	1.0 U	1.0 UU
Trichloroethene	ug/L	2	25 U	1.0 U	1.0 U	1.0 U	1.0 U	50 U	1.0 U	1.0 U	1.0 UU
Vinyl chloride	ug/L	1	25 U	1.0 U	1.0 U	1.0 U	1.0 U	50 U	1.0 U	1.0 U	0.22 J
Xylenes (total)	ug/L	8600	1100	260 J	140	130	92	1500	2300 J	2100	2900
Total VOCs	ug/L	--	6252.6	2401.3	1190.96	1537.47	2342.86	18658	18008.6	17741.7	25543.92

Notes:

J - Estimated concentration.

U - Not detected at the associated reporting limit.

JJ - Not detected; associated reporting limit is estimated.

Criteria Notes:

* - Criteria value for 1,3-Dichloropropene used.

-- Not applicable.

TABLE 3

SHALLOW GROUNDWATER ANALYTICAL RESULTS
NJGWSL COMPARISON
JIS LANDFILL

Sample Location:	MW-5 7/24/2014	MW-5 10/15/2014	MW-6S 4/9/2014	MW-7S 4/9/2014	MW-7S 4/9/2014 Duplicate	MW-18S 4/9/2014	MW-42S 4/8/2014	MW-43S 10/14/2013	MW-43S 2/4/2014	MW-43S 4/24/2014
Parameters	Units									
Volatiles										
1,1,1-Trichloroethane	ug/L	25 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Tetrachloroethane	ug/L	25 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	ug/L	25 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	ug/L	25 U	10 U	1.0 U	0.82 J	0.73 J	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	ug/L	25 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	ug/L	25 U	10 U	0.62 J	28	30	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	ug/L	21 J	11	1.0 U	13	12	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	ug/L	25 U	10 U	1.0 U	1.2	1.1	1.0 U	0.24 J	1.0 U	1.8 J
1,2-Dichloropropane	ug/L	25 U	10 U	1.0 U	2.8	2.5	0.61 J	1.0 U	1.0 U	0.51 J
1,3-Dichlorobenzene	ug/L	19 J	11	1.0 U	7.7	6.9	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	ug/L	160	65	1.0 U	56	52	1.0 U	1.0 U	1.0 U	1.0 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	130 U	50 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Acetone	ug/L	130 U	50 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	ug/L	30000	34000	1.0 U	2.0	2.0	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	ug/L	25 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	ug/L	25 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane (Methyl bromide)	ug/L	25 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon tetrachloride	ug/L	25 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	ug/L	950	600	1.0 U	13	12	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	ug/L	170	67	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform (Trichloromethane)	ug/L	25 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlormethane (Methyl chloride)	ug/L	25 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	ug/L	25 U	10 U	1.0 U	0.53 J	0.52 J	1.0 U	0.44 J	1.0 U	1.0 U
cis-1,3-Dichloropropene	ug/L	25 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Cyclohexane	ug/L	70	62	1.0 U	0.85 J	0.84 J	1.0 U	1.0 U	1.0 U	1.0 U
Dibromo-chloromethane	ug/L	25 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dichlorodifluoromethane (CFC-12)	ug/L	25 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	ug/L	3500	1300	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Hexane	ug/L	25 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methylene chloride	ug/L	25 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	ug/L	25 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	ug/L	45	8.1 J	1.0 U	0.23 J	0.22 J	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	ug/L	8.3 J	2.5 J	1.0 U	0.38 J	0.41 J	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	ug/L	25 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	ug/L	25 U	10 U	1.0 U	0.41 J	0.34 J	1.0 U	0.10 J	1.0 U	1.0 U
Vinyl chloride	ug/L	25 U	10 U	1.0 U	0.58 J	0.48 J	1.0 U	1.0 U	1.0 U	1.0 U
Xylenes (total)	ug/L	12000	2400	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Total VOCs	ug/L	46943.3	38526.6	0.62	127.5	122.04	0.61	0.78	ND	1.8
Notes:										
J - Estimated concentration.										
U - Not detected at the associated reporting limit.										
UJ - Not detected; associated reporting limit is estimated.										
Criteria Notes:										
* - Criteria value for 1,3-Dichloropropene used.										
-- Not applicable.										

TABLE 3

SHALLOW GROUNDWATER ANALYTICAL RESULTS
NJGWSL COMPARISON
JIS LANDFILL

Sample Location:	MW-43S 7/24/2014	MW-43S 7/24/2014	MW-43S 10/16/2014	MW-44S 10/15/2013	MW-44S 2/7/2014	MW-44S 4/24/2014	MW-44S 7/24/2014	MW-44S 10/17/2014	MW-45S 4/8/2014	MW-46S 4/11/2014
Parameters	Units									
Volatiles										
1,1,1-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Tetrachloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	ug/L	1.0 U	1.0 U	0.24 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	ug/L	1.5	1.5	2.3	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	ug/L	0.55 J	0.54 J	0.83 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Acetone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	ug/L	0.19 J	0.16 J	2.6	1.0 U	0.19 J	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane (Methyl bromide)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon tetrachloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	ug/L	1.0 U	1.0 U	0.34 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform (Trichloromethane)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlormethane (Methyl chloride)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Cyclohexane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibromochloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dichlorodifluoromethane (CFC-12)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	ug/L	1.0 U	1.0 U	0.66 J	1.0 U	0.11 J	1.0 U	1.0 U	1.0 U	1.0 U
Hexane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methylene chloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	ug/L	1.0 U	1.0 U	0.13 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.13 J
Vinyl chloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Xylenes (total)	ug/L	2.0 U	2.0 U	1.6 J	2.0 U	0.44 J	2.0 U	2.0 U	2.0 U	2.0 U
Total VOCs	ug/L	2.24	2.2	8.7	ND	0.74	ND	ND	ND	0.13

Notes:

J - Estimated concentration.

U - Not detected at the associated reporting limit.

UJ - Not detected; associated reporting limit is estimated.

Criteria Notes:

* - Criteria value for 1,3-Dichloropropene used.

-- Not applicable.

TABLE 3

SHALLOW GROUNDWATER ANALYTICAL RESULTS
NJGWSL COMPARISON
JIS LANDFILL

Sample Location:	MW-47S 4/17/2014	MW-48S 4/17/2014	MW-49S 10/15/2013	MW-49S 2/6/2014	MW-49S 4/22/2014	MW-49S 7/25/2014	MW-49S 10/16/2014	MW-49S 10/16/2014 Duplicate	MW-50S 10/16/2013	MW-50S 10/16/2013 Duplicate
Parameters	Units									
Volatiles										
1,1,1-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Tetrachloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	ug/L	1.0 U	1.0 U	0.89 J	0.91 J	0.97 J	0.45 J	0.92 J	0.93 J	1.0 U
1,2-Dichloroethane	ug/L	1.0 U	1.0 U	0.87 J	0.53 J	0.37 J	0.28 J	0.68 J	0.71 J	1.0 U
1,2-Dichloropropane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.28 J	1.0 U	1.0 U
1,3-Dichlorobenzene	ug/L	0.21 J	1.0 U	0.54 J	0.52 J	0.52 J	0.16 J	0.44 J	0.36 J	1.0 U
1,4-Dichlorobenzene	ug/L	1.0 U	1.0 U	5.2	4.5 J	5.3	3.5	6.8	6.5	1.0 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Acetone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	ug/L	1.0 U	1.0 U	3.3	3.2 J	3.0	1.8	3.0	3.2	1.0 U
Bromodichloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	0.20 J	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane (Methyl bromide)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon tetrachloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	ug/L	1.0 U	1.0 U	0.98 J	0.87 J	0.87 J	0.58 J	1.0	1.0	1.0 U
Chloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform (Trichloromethane)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlormethane (Methyl chloride)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	ug/L	25	1.0 U	0.74 J	0.89 J	0.81 J	0.51 J	0.51 J	0.50 J	1.0 U
cis-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Cyclohexane	ug/L	1.0 U	1.0 U	1.6	1.0 U	1.1	1.0 U	0.77 J	0.82 J	1.0 U
Dibromochloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dichlorodifluoromethane (CFC-12)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	ug/L	1.0 U	1.0 U	0.15 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Hexane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methylene chloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	ug/L	0.71 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	0.19 J	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	ug/L	0.21 J	1.0 U	1.0 U	1.0 U	0.28 J	1.0 U	0.23 J	0.29 J	1.0 U
trans-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	ug/L	2.4	1.0 U	1.0 U	0.24 J	0.39 J	0.29 J	0.35 J	0.27 J	1.0 U
Vinyl chloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	0.31 J	1.0 U	1.0 U	1.0 U	1.0 U
Xylenes (total)	ug/L	2.0 U	2.0 U	2.0 U	0.60 J	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Total VOCs	ug/L	28.53	ND	14.12	12.41	14.31	7.57	14.98	14.86	ND

Notes:

J - Estimated concentration.

U - Not detected at the associated reporting limit.

UJ - Not detected; associated reporting limit is estimated.

Criteria Notes:

* - Criteria value for 1,3-Dichloropropene used.

-- Not applicable.

TABLE 3

**SHALLOW GROUNDWATER ANALYTICAL RESULTS
NJGWSL COMPARISON
JIS LANDFILL**

Sample Location:	MW-50S	MW-50S	MW-50S	MW-50S	MW-51S	MW-52S	MW-54S	MW-55S	MW-66S	MW-67S
Sample Date:	2/6/2014	4/17/2014	7/25/2014	10/17/2014	4/17/2014	4/8/2014	4/8/2014	4/24/2014	4/8/2014	4/9/2014
Parameters	Units									
Volatiles										
1,1,1-Trichloroethane	ug/L	1.0 U								
1,1,2-Tetrachloroethane	ug/L	1.0 U								
1,1,2-Trichloroethane	ug/L	1.0 U								
1,1-Dichloroethane	ug/L	1.0 U								
1,1-Dichloroethene	ug/L	1.0 U								
1,2,4-Trichlorobenzene	ug/L	1.0 U								
1,2-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	0.29 J	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	ug/L	1.0 U								
1,2-Dichloropropane	ug/L	1.0 U								
1,3-Dichlorobenzene	ug/L	1.0 U								
1,4-Dichlorobenzene	ug/L	1.0 U								
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	5.0 U								
Acetone	ug/L	5.0 U								
Benzene	ug/L	0.34 J	1.0 U							
Bromodichloromethane	ug/L	1.0 U								
Bromoform	ug/L	1.0 U								
Bromomethane (Methyl bromide)	ug/L	1.0 U								
Carbon tetrachloride	ug/L	1.0 U								
Chlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	0.26 J	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	ug/L	1.0 U								
Chloroform (Trichloromethane)	ug/L	1.0 U								
Chlormethane (Methyl chloride)	ug/L	1.0 U								
cis-1,2-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	0.99 J	1.0 U	30	1.8	0.61 J
cis-1,3-Dichloropropene	ug/L	1.0 U								
Cyclohexane	ug/L	1.0 U								
Dibromochloromethane	ug/L	1.0 U								
Dichlorodifluoromethane (CFC-12)	ug/L	1.0 U	0.25 J	1.0 U	1.0 U	1.0 U				
Ethylbenzene	ug/L	1.0 U								
Hexane	ug/L	1.0 U								
Methylene chloride	ug/L	1.0 U								
Tetrachloroethene	ug/L	1.0 U	0.22 J	6.8	0.69 J	1.3				
Toluene	ug/L	1.0 U								
trans-1,2-Dichloroethene	ug/L	1.0 U	0.25 J	1.0 U	1.0 U					
trans-1,3-Dichloropropene	ug/L	1.0 U								
Trichloroethene	ug/L	1.0 U	1.0 U	1.0 U	0.24 J	0.28 J	1.0 U	8.8	0.69 J	0.43 J
Vinyl chloride	ug/L	1.0 U	0.35 J	1.0 U	1.0 U					
Xylenes (total)	ug/L	0.43 J	2.0 U							
Total VOCs	ug/L	0.77	ND	ND	ND	0.24	1.82	0.47	46.2	3.18
										2.34

Notes:

J - Estimated concentration.

U - Not detected at the associated reporting limit.

UJ - Not detected; associated reporting limit is estimated.

Criteria Notes:

* - Criteria value for 1,3-Dichloropropene used.

-- Not applicable.

TABLE 4

Page 1 of 1

VADOSE ZONE FIELD SAMPLING RESULTS
JIS LANDFILL SITE

Well	21-Oct-13					29-Apr-14					17-Oct-14				
	PID in Well (ppm)	PID @ Ground Level	O2 (%)	CO2 (%)	CH4 (%)	PID in Well (ppm)	PID @ Ground Level	O2 (%)	CO2 (%)	CH4 (%)	PID in Well (ppm)	PID @ Ground Level	O2 (%)	CO2 (%)	CH4 (%)
MW55V	0.00	0.00	18.70	3.00	0.00	0.00	0.00	19.50	3.70	0.00	0.00	0.00	18.40	3.20	0.00
MW42V	0.00	0.00	19.30	0.70	0.00	0.00	0.00	20.00	0.70	0.00	0.00	0.00	19.60	0.70	0.00
MW43V	0.00	0.00	19.30	0.80	0.00	0.00	0.00	20.10	0.90	0.00	0.00	0.00	19.00	0.70	0.00
MW44V	0.00	0.00	16.20	5.30	0.00	0.00	0.00	18.70	3.30	0.00	0.00	0.00	19.00	4.00	0.00
MW45V	0.00	0.00	18.90	2.70	0.00	0.00	0.00	19.60	2.90	0.00	0.00	0.00	18.30	2.50	0.00
MW46V	0.00	0.00	19.60	1.00	0.00	0.00	0.00	13.60	0.30	0.00	0.00	0.00	19.00	0.50	0.00
MW49V	0.00	0.00	19.30	0.40	0.00	0.00	0.00	19.70	0.60	0.00	0.00	0.00	19.20	1.10	0.00
MW50V	0.00	0.00	16.80	5.30	0.00	0.00	0.00	20.30	1.50	0.00	0.00	0.00	18.10	3.80	0.00
MW65V	0.00	0.00	19.50	1.70	0.00	0.00	0.00	19.30	3.30	0.00	0.00	0.00	18.90	2.90	0.00
MW66V	0.00	0.00	20.10	0.00	0.00	Buried					Buried				
MW67V	0.00	0.00	18.30	3.80	0.00	0.00	0.00	20.70	0.20	0.00	0.00	0.00	20.10	0.20	0.00

TABLE 5

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**2014 Indoor/Outdoor
Air Analytical Results
JIS LANDFILL SITE**

Sample Location: Sample Date:		JIS Office 3/12/2014	Outside Ambient 3/12/2014
Parameter	NJ Non-Residential Indoor	Air Screening Level	
	Units		
Volatile Organic Compounds			
1,1,1-Trichloroethane	µg/m3	22000	1 U
1,1,2,2-Tetrachloroethane	µg/m3	3	1 U
1,1,2-Trichloroethane	µg/m3	3	1 U
1,1-Dichloroethane	µg/m3	8	0.8 U
1,1-Dichloroethene	µg/m3	880	0.8 U
1,2,4-Trichlorobenzene	µg/m3	9	4 U
1,2,4-Trimethylbenzene	µg/m3	--	2
1,2-Dibromoethane (Ethylene dibromide)	µg/m3	4	2 U
1,2-Dichlorobenzene	µg/m3	880	1 U
1,2-Dichloroethane	µg/m3	2	0.8 U
1,2-Dichloropropane	µg/m3	2	0.9 U
1,2-Dichlorotetrafluoroethane (CFC 114)	µg/m3	--	1 U
1,3,5-Trimethylbenzene	µg/m3	--	1 U
1,3-Butadiene	µg/m3	1	0.4 U
1,3-Dichlorobenzene	µg/m3	--	1 U
1,4-Dichlorobenzene	µg/m3	3	1 U
1,4-Dioxane	µg/m3	--	18 U
2,2,4-Trimethylpentane	µg/m3	--	0.9 U
2-Butanone (Methyl ethyl ketone) (MEK)	µg/m3	22000	11
2-Chlorotoluene	µg/m3	--	1 U
4-Ethyl toluene	µg/m3	--	1 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	µg/m3	13000	2 U
Acetone	µg/m3	140000	60
Allyl chloride	µg/m3	2	2 U
Benzene	µg/m3	2	2
Bromodichloromethane	µg/m3	3	1 U
Bromoform	µg/m3	11	2 U
Bromomethane (Methyl bromide)	µg/m3	22	0.8 U
Carbon disulfide	µg/m3	3100	2 U
Carbon tetrachloride	µg/m3	3	1 U
Chlorobenzene	µg/m3	220	0.9 U
Chloroethane	µg/m3	44000	1 U
Chloroform (Trichloromethane)	µg/m3	2	1 U
Chloromethane (Methyl chloride)	µg/m3	390	1 U
cis-1,2-Dichloroethene	µg/m3	--	0.8 U
cis-1,3-Dichloropropene	µg/m3	3*	0.9 U
Cyclohexane	µg/m3	26000	0.7 U
Dibromochloromethane	µg/m3	4	2 U
Dichlorodifluoromethane (CFC-12)	µg/m3	440	2 U
Ethanol	µg/m3	--	440 J
Ethylbenzene	µg/m3	5	1
Hexachlorobutadiene	µg/m3	5	2 U
Hexane	µg/m3	3100	2
Isopropyl alcohol	µg/m3	--	12 U
m&p-Xylenes	µg/m3	440	5
Methyl methacrylate	µg/m3	--	2 U
Methyl tert butyl ether (MTBE)	µg/m3	47	0.7 U
Methylene chloride	µg/m3	1200	5
N-Heptane	µg/m3	--	0.8 U
o-Xylene	µg/m3	440	2
Styrene	µg/m3	4400	0.9 U
tert-Butyl alcohol	µg/m3	--	15 U
Tetrachloroethene	µg/m3	47	1 U
Tetrahydrofuran	µg/m3	--	15 U
Toluene	µg/m3	22000	21
trans-1,2-Dichloroethene	µg/m3	260	0.8 U
trans-1,3-Dichloropropene	µg/m3	3*	0.9 U
Trichloroethene	µg/m3	3	1 U
Trichlorofluoromethane (CFC-11)	µg/m3	3100	1
Trifluorotrichloroethane (Freon 113)	µg/m3	130000	2 U
Vinyl bromide (Bromoethene)	µg/m3	2	0.9 U
Vinyl chloride	µg/m3	3	0.5 U

Notes:

J - Estimated concentration.

U - Not detected at the associated reporting limit.

Criteria Notes:

* - Criteria value for 1,3-Dichloropropene used for comparison.

-- Not applicable.